## INTERNATIONAL AGREEMENTS/COMMITMENTS

SECRETARY
SAMUEL W. BODMAN
JANUARY 2005-DECEMBER 2008

## Matthews, Carol

From:

Morman, Laurie

Sent:

Monday, November 24, 2008 2:52 PM

To:

Nicoll, Eric; Matthews, Carol

Subject:

RE: MOU's and Agreements

Attachments: Agreements - 1979 to Present.pdf

Here's an electronic version of what PI provided......

From: Nicoll, Eric

Sent: Monday, November 24, 2008 11:40 AM To: Morman, Laurie; Kolb, Ingrid; Matthews, Carol

**Subject:** RE: MOU's and Agreements

OK then we will not include the ones which have come up here. Thanks. Did they organize it by year?

From: Morman, Laurie

Sent: Monday, November 24, 2008 11:38 AM To: Nicoll, Eric; Kolb, Ingrid; Matthews, Carol

Subject: RE: MOU's and Agreements

PI has already provided the International agreements.

From: Nicoll, Eric

**Sent:** Monday, November 24, 2008 11:37 AM To: Kolb, Ingrid; Morman, Laurie; Matthews, Carol

**Subject:** MOU's and Agreements

We are pulling together MOU's and Agreements which are in our system, and it looks like there are roughly 75 going back to the start of the Administration. Please note, however, that we would only have a record of things that were brought for signature by S1, S2 or the Unders. We would not necessarily have agreements signed by Assistant Secretaries (think of all those that Mr. Karsner signed). It may be necessary to conduct a data call.

Do you know if PI has been asked for international agreements? We have a fair amount of them in this search, however I believe that PI would have a fairly comprehensive record of international agreements. I think that Sec. Bodman asked for a comprehensive review of all of our international agreements. If PI has such an exercise underway, please let us know if we should exclude them from what we are compiling.

Eric

## U.S. DOE - Office of International Science and Technology Cooperation

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Country: A	Argentina						
7/6/1995		Completed	Statement of Intent	False		Energy Efficiency and Renewable Energ	gy Renewable Energy & Energy Efficiency Technologies
Title:	Joint Statem Energy Effic	ent of Intent iency Techno	between the Depart logies	ment of E	Energy of the United	d States of America and the Energy Se	cretariat of the Argentine Republic on Renewable Energy and
Comment:	Enforcing the collaboration.	intent of exch	anging experience a	nd views o	on opportunities for t	he appropriate utilization of renewable en	ergy and energy efficiency technologies and in fostering
8/1/1996	8/1/2001	In Force	Primary DOE	True		Energy Research and Development	Energy Technology Cooperation
	of Energy 16	cnnology Co	operation				and Services Secretariat of the Argentine Republic in the Area
Comment:	eπiclency and	i renewabie pr	g was hosted by FE i ojects started under nergy planning, and r	a stateme	nt of intent which wa	as a precursor to this agreement. In Dec.	held in Buenos Aires in Dec 98. EERE has work on energy of 97 four priority areas of work were identified - energy efficiency,
10/16/1997	10/16/2002	In Force	Primary DOE	True		Arms Control and Nonproliferation	Nuclear Technologies
	i ecnnicai Ex	cnange and	Cooperation in the	area of Pe	eaceful Uses of Nuc	clear Energy	I Atomic Energy Commission of the Argentine Republic for
Comment:	Expanded sis and decomm	ter lab arrange ssioning, and	ement supporting Art LEU advanced fuels	icle IV of t	the NPT. Existing ar	nnexes cover work in Molybdenum-99 pro	duction for LEU, boron neutron capture therapy, decontamination
4/18/1994	4/18/2004	In Force	Primary DOE	True		Arms Control and Nonproliferation	International Safeguards Applications
	material Con	troi, Account	ancy, verification, i	Pnysical I	Protection, and Adv	vanced Containment and Surveillance	rgentina Concerning Research and Development in Nuclear Technology for International Safeguards Applications
Comment:	Cooperate in protection and	research, deve d advanced co	elopment, testing, an intainment and surve	d evaluati illance ted	on of technology, eq chnologies for interna	uipment and procedures in order to impro ational safeguards applications.	ove nuclear material control, accountancy, verification, physical
5/29/1996	5/29/2006	In Force	Primary DOE	True		Environmental Restoration and Waste Management	Radioactive and Mixed Waste Management
	i echnicai Ex	cnange and (	Cooperation in the <i>i</i>	Area of R	adioactive and Mix	ed Waste Management	l Atomic Energy Commission of the Argentine Republic for
Comment:	Study radioac characterizati	tive and mixed on of geologic	d waste managemen formations; disposal	t activities in geolog	in such areas as: pi ic formations, etc.	reparation and packaging; decontaminatio	on and decommissioning; surface and subsurface storage;
4/13/1998	10/16/2002		Secondary DOE		Primary DOE	Arms Control and Nonproliferation	Annex 1 - LEU Moly-99 production
						from Low-Enriched Uranium	
	In force as lor	ng as the Imple	ementing Arrangeme	nt. Action	sheets are under d	evelopment.	
4/13/1998	10/16/2002		Intergovernmental		Primary DOE	Arms Control and Nonproliferation	Annex 2 - Boron Neutron Capture Therapy
			tion in the Area of L				
			ementing Arrangeme	nt. Exper	t visits are underway	<i>1</i> .	
4/13/1998	10/16/2002		Secondary DOE		Primary DOE	Arms Control and Nonproliferation	Annex 3 - D&D of Nuclear Facilities
						nmissioning of Nuclear Facilities	
						ly held in fall of 98 at ANL.	
2/8/1999	2/8/2003		Tertiary DOE		Secondary DOE	Nuclear Energy	Action Sheet 1 - Project Annex 1
	Action Sheet Commission	of he Argent	o Project Annex 1 f ine Republic and th	or Coope e Univers	ration in the Field of sity of Chicago, as	of Molybdenum-99 Production for Low- Operator of Argonne National Laborato	Enriched Uranium between the National Atomic Energy ory
2/8/1999	2/8/2003	lo Farra	Todion, DOS		0	A O	
2/6/1999	Action Sheet	In Force	Tertiary DOE	False	Secondary DOE	Arms Control and Nonproliferation	Action Sheet 1 Annex 4, Dart Code Development

Start Date	End Date	Status	Agreement Type	Legally	Parent Type	DOE Office	Brief Description
	L		<u></u>	Binding			
Comment:		I= <b>C</b>	D		Deimon DOF	Association and New religious	Assert Advanced Fuels
8/18/1998	10/16/2002	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Annex 4 - Advanced Fuels
	•	•	ation in Field of Low				
	Remains in to		s the Implement Arra				A.C. Dista
8/11/1998		•	Tertiary DOE	False	•	Arms Control and Nonproliferation	Action Sheet 1
			Course on Deconta	ımınatıon	ana Decommissio	ning	
	Course was r		the fall of 1998.				
8/11/1998		In Force	Tertiary DOE	False	<del>-</del>	Arms Control and Nonproliferation	Action Sheet 1
			to Project Annex 2	Cooperati	ion in the Field of E	Boron Neutron Capture Theraphy	
Comment:	Technical exc	hange visits.	_				
Country:	Australia						
6/20/1980	12/31/1985	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Solar Information
Title:	Solar Inform	ation					
Comment:	Description n	ot available in	History				
4/7/1987	12/31/1987	Expired	Primary DOE	False		Civilian Radioactive Waste Management	Aerial Radiological Survey
	its successo	rs and assig	ns	tment of	Energy (hereinafte	r referred to as DOE) and the Australian Atom	ic Energy Commission (hereinafter referred to as AAEC,
	Description n			<del></del>			
4/11/1988	4/11/1998	Expired	Primary DOE	False		Energy Research and Development	Energy R&D
Title:			anding between the esearch and develo		artment of Energy	and the Department of Primary Industries and	d Energy of the Commonwealth of Australia on
Comment	: Establishing v	vider coopera	•	esearch ar		SITS AND ASSIGNMENTS: Not Specifically Mer	ntioned DURATION: To Be Determined DOE/HQ
10/1/1992	10/1/1997	Expired	Primary DOE	True		Arms Control and Nonproliferation	Nuclear Material Control Safeguards Application
Title	Agreement to Accountance	etween the U y, Verification	United States Depar n, Physical Protecti	tment of a	Energy and the Au dvanced Containn	stralian Safeguards Office Concerning Resear nent and Surveillance Technologies for Interna	rch and Development in Nuclear Material Control, ational Safeguards Applications
Comment	To be continu	ed under a ne	ew agreement curren	tly in nego	tiations, and likely t	o be concluded by Aug 1998	
11/4/1969	12/31/1972	Expired	Primary DOE	False		Nuclear Energy	Exchange Nuclear S&T Information
Title:			anding between the hnology Information		tates Atomic Energ	gy Commission and the Australian Atomic En	ergy Commission for Cooperation in the Exchange
Comment	<u> </u>		· · · · · · · · · · · · · · · · · · ·				Silve
6/23/1978	12/31/1985	Expired	Primary DOE	False		Fossil Energy	Coal R&D
Title:	: Memorandu Australian D	n of Underst epartment of	anding for Exchang FNational Developm	e of Infor ent	mation concerning	g Coal Conversion, Extraction and Processing	between the U.S. Department of Energy and the
Comment:	: Description n	ot available in	History				
6/10/1988	4/11/1998	Expired	Secondary DOE		Primary DOE	Energy Efficiency and Renewable Energy	Alternative Fuels
Title	Program Arr of Information	angement be on Concernin	etween the Departm ng Alternative Fuels	ent of En	ergy of the United	States of America and the Department of Prim	nary Industries and Energy of Australia on the Exchange
Comment			operation for the time gas fueled gasoline a			n alternative fuels, particularly transport fuels, with	n emphasis on demonstration of flexible-fueled vehicles (FFV
6/10/1988	12/31/1989	Expired	Secondary DOE	False	Primary DOE	Information and/or Personnel Exchange	Exchange of Information
Title	: Letter of Inte	nt between t	the Department of E	nergy of	the United States o	of America and the Department of Primary Indi	ustries and Energy of Australia
Comment	Description n	ot available in	History	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
1/13/1989	4/11/1998	Expired	Secondary DOE	False	Primary DOE	Information and/or Personnel Exchange	Research-in-Progress

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title	Program arra		tween the U.S. Depa		f Energy and Dep	partment of Primary Industries and Energy of A	ustralia on the exchange of information concerning
Comment						lement respective energy R&D activities. VISITS A	AND ASSIGNMENTS: Not Specifically Mentioned/Feasible
5/11/1989	4/11/1998	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Oil Shale Research
Title	Program arra research-in-		tween the U.S. Depa	rtment o	f Energy and Dep	partment of Primary Industries and Energy of A	ustralia on the exchange of information concerning
Comment	relationships	to air pollution	all focus on the following issues; (c) mining st 577; FTS: 896-1577	ing 4 area udies; and	is of oil shale resea d (d) systems anal	arch and development: (a) oil loss mechanism (es ysis. VISITS AND ASSIGNMENTS: Yes DURATI	pecially coking and cracking; (b) mineral reactions and their ION: To Be Determined DOE/HQ CONTACT: Marvin
5/12/1994	4/11/1998	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Bio-Electromagnetic Research
Title			tween the Departme g Bio-Electromagne			l States of American and the Department of Pri	mary Industries and Energy of Australia on the Exchang
Comment	: Establish a fr	amework for c	cooperation, through a	an exchan	ige of information,	on bio-electromagnetic research.	
9/15/1998	9/14/2008	In Force	Primary DOE	True		Arms Control and Nonproliferation	Safeguards Arrangement
	material Cor	t between the itrol Account	e United States Dep ancy, Verification, F	artment o Physical F	of Energy and the Protection, Advan	Australian Safeguards and Nonproliferation Of the Containment and Surveillance Technologies	ffice Concerning Research and Development in Nuclear s for International Safeguards
11/10/2003		In Force	Primary DOE	True			Cooperation in the Energy Sector
Comment	•						
Country:	 Austria						
Country: 9/18/1994	Austria	In Force	Primary DOE	False	<u> </u>	Energy Efficiency and Renewable Energy	EE/Conservation and Climate Change
9/18/1994			•		vironmental Asp	Energy Efficiency and Renewable Energy ects of Energy Policy and the Protection of Glo	9
9/18/1994 <b>Title</b>	: Memorandu	m of Underst	anding on Cooperat	ion in En	•		bal Climate
9/18/1994 Title Comment	: Memorandu	m of Underst	anding on Cooperat	ion in En	•	ects of Energy Policy and the Protection of Glo	bal Climate
9/18/1994 Title Comment	: Memorandu	m of Underst	anding on Cooperat	ion in En	•	ects of Energy Policy and the Protection of Glo	bal Climate
9/18/1994 Title Comment Country: 2/11/1999	: Memorandui : Cooperate in BangladesI 2/11/2004 : Arrangemen	m of Understa areas of suffice h In Force at between the	anding on Cooperat cient growth of energy Primary DOE	tion in En y supplies False ergy of th	; energy efficiency	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange	bal Climate biosphere (climate change).
9/18/1994 Title Comment Country: 2/11/1999 Title	: Memorandur : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh	m of Understances of sufficient for Exchange	anding on Cooperate cient growth of energy Primary DOE Department of Energy Informa	False ergy of th	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange	bal Climate biosphere (climate change).  Exchange of Energy Information
9/18/1994 Title Comment Country: 2/11/1999 Title	: Memorandur : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh	m of Understances of sufficient for Exchange	anding on Cooperate cient growth of energy Primary DOE Department of Energy Informa	False ergy of the	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange of America and the Ministry of Energy and Miner	bal Climate biosphere (climate change).  Exchange of Energy Information
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998	: Memorandui : Cooperate in Bangladesl 2/11/2004 : Arrangemen Bangladesh : EIA will work	m of Understa areas of suffici h In Force at between the for Exchange with an agenc In Force	anding on Cooperate cient growth of energy  Primary DOE  Department of Energy Informates by designated by MEC	False ergy of the	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange of America and the Ministry of Energy and Mineral obly balanced exchange of energy information.	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998	: Memorandum : Cooperate in Bangladesi 2/11/2004 : Arrangement Bangladesh : EIA will work	m of Understa areas of suffici h In Force at between the for Exchange with an agenc In Force	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate cy designated by MEC  Statement of Intent	False ergy of the	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange of America and the Ministry of Energy and Mineral obly balanced exchange of energy information.	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998 Title Comment	: Memorandum : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh : EIA will work : Joint Statem	m of Understa areas of suffici h In Force at between the for Exchange with an agenc In Force	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate cy designated by MEC  Statement of Intent	False ergy of the	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange of America and the Ministry of Energy and Mineral obly balanced exchange of energy information.	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998 Title Comment	: Memorandum : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh : EIA will work : Joint Statem	m of Understa areas of suffici h In Force at between the for Exchange with an agenc In Force	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate cy designated by MEC  Statement of Intent	False ergy of the	e United States o	ects of Energy Policy and the Protection of Glob and conservation measures and protection of the Information and/or Personnel Exchange of America and the Ministry of Energy and Mineral obly balanced exchange of energy information.	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998 Title Comment Country: 7/1/1981	: Memorandur : Cooperate in Bangladesl 2/11/2004 : Arrangemen Bangladesh : EIA will work : Joint Statem : : Belgium 1/19/1994	m of Understa areas of sufficient In Force at between the for Exchange with an agence In Force sent of Coope Expired between the U	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate designated by MEC  Statement of Intenteration in Energy  Primary DOE	False False False False False False True	e United States o	Information and/or Personnel Exchange of America and the Ministry of Energy and Miner Day balanced exchange of energy information.  Energy Research and Development  Civilian Radioactive Waste Management	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of  SOI in Enregy Cooperation
9/18/1994 Title Comment Country: 2/11/1999 Title Comment 12/15/1998 Title Comment Country: 7/1/1981	: Memorandum : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh : EIA will work : Joint Statem : : : : : : : : : : : : : : : : : : :	m of Understa areas of sufficient In Force at between the for Exchange with an agence In Force sent of Coope Expired between the U	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate designated by MEC  Statement of Intenteration in Energy  Primary DOE	False False False False False False True	e United States o	Information and/or Personnel Exchange of America and the Ministry of Energy and Miner obly balanced exchange of energy information.  Energy Research and Development  Civilian Radioactive Waste Management	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of  SOI in Enregy Cooperation  Radioactive Waste Management
Title Comment Country: 2/11/1999 Title Comment 12/15/1998 Title Comment Country: 7/1/1981 Title Comment	: Memorandum : Cooperate in Bangladesi 2/11/2004 : Arrangemen Bangladesh : EIA will work : Joint Statem : : : : : : : : : : : : : : : : : : :	m of Understa areas of sufficient In Force at between the for Exchange with an agence In Force sent of Coope Expired between the U	ending on Cooperate cient growth of energy  Primary DOE  Department of Energy Informate designated by MEC  Statement of Intenteration in Energy  Primary DOE	False False False False False False True	e United States o	Information and/or Personnel Exchange of America and the Ministry of Energy and Miner obly balanced exchange of energy information.  Energy Research and Development  Civilian Radioactive Waste Management	bal Climate biosphere (climate change).  Exchange of Energy Information ral Resources, Government of the People's Republic of  SOI in Enregy Cooperation  Radioactive Waste Management

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Comment: Country: B 6/29/1992 Title: Comment: 9/30/1996 Title: Comment:	Protocol of la Based Rural Facilitate joint personnel of s	Completed Intent betwee Electrificatio activities rela such systems In Force	Statement of Intent In United States Dep In Program Ited to solar energy be and equipment; etc.	False		tates of America and The Ministry of Mineral Energy Efficiency and Renewable Energy	s, Energy and Water Afairs of the Republic of Botswana for
Country: B 6/29/1992 Title: Comment: 9/30/1996 Title: Comment:	Protocol of la Based Rural Facilitate joint personnel of s	ntent betwee Electrificatio activities rela such systems In Force	n United States Dep in Program ited to solar energy ba and equipment; etc.	artment o	of Energy and the	Energy Efficiency and Renewable Energy	
6/29/1992 Title: Comment: 9/30/1996 Title: Comment:	Protocol of la Based Rural Facilitate joint personnel of s	ntent betwee Electrificatio activities rela such systems In Force	n United States Dep in Program ited to solar energy ba and equipment; etc.	artment o	of Energy and the	Energy Efficiency and Renewable Energy	
Title: Comment: 9/30/1996 Title: Comment:	Facilitate joint personnel of s	ntent betwee Electrificatio activities rela such systems In Force	n United States Dep in Program ited to solar energy ba and equipment; etc.	artment o	of Energy and the	Energy Efficiency and Renewable Energy	
Comment: 9/30/1996 Title: Comment:	Facilitate joint personnel of s	Electrification activities related to the such systems In Force	n <b>Program</b> Ited to solar energy ba and equipment; etc.		of Energy and the		Solar Energy Based Rural Electrification Program
9/30/1996 Title:	personnel of s	In Force	and equipment; etc.	acad tach			til to Cooperate in the Establishment of a Solar Energy
Title:	Joint Statem				nologies, including	lighting systems in the Jericoacoara Model Villa	age and elsewhere in the Brazilian State of Ceara; training of
Comment:	Joint Statem	ant of Intent	Statement of Intent			Fossil Energy	Clean Coal Technologies
Comment:	Jane Catain	na, and the S	on Clean Coal Tech indicato Nacional d	nologies a Industri	between the Depa la da Extracao do	artment of Energy of the United States of An Carvao, Eletrabras, and the Ministry of Mine	nerica and the State of Rio Grande do Sul and the State of es and Energy of the Federal Republic of Brazil
	Intention to co of Mines and	operate betw Energy of Bra	een DOE, the State of zil in clean coal techn	f Rio Gra ologies.	nde do Sul, the Sta	ate of Santa Catarina, The Sindicato National da	a Industria da Extracao do Carvao, Electrobras, and the Ministry
5/26/1984		Expired	Primary DOE	False		Fossil Energy	Coal Technology
Title:	Memorandur Empresas El United States	n of Understa ectricas Bras s of America	anding for the Devel sileiras-CAEEB Bran	opment of the	of Technology Util Ministry of Mines	lizing the Site of the Triunfo Coal Deposits in s and Energy Government of the Federative	n Rio Grande do Sul Between Companhia Auxiliar de Republic of Brazil and the Department of Energy-DOE
Comment:	Feasibility of a	a suitable site	with a 4 meter seam	of 55% as	sh coal near Porto	Alegre, Rio Grande do Sul.	
1/21/1985	1/31/1990	Expired	Primary DOE	Faise		Fossil Energy	Underground Coal Gasification
	Agreement fo Companhia	or the Exchai Auxiliar de Ei	nge of Technical Info mpresas Eletricas B	ormation rasileiras	and Cooperation	in the Field of Underground Coal Gasification	on between the United States Department of Energy and
Comment:	40/44/0000	I. F	D: DOE		· · · · · · · · · · · · · · · · · · ·		
	10/14/2002	In Force	Primary DOE	True	of America and t	Energy Research and Development the Federative Republic of Brazil for Coopera	Energy Technology
	Umbrella Agre		in between the Onit	eu States	Ol America and t	ne rederative Republic of Brazil for Coopers	ition in the Area of Energy Technology
4/18/1994	4/18/2004	In Force	Primary DOE	True		Arms Control and Nonproliferation	International Safeguards Applications
Title:	Aareement b	etween the L	Inited States Depart	ment of E	Energy and the Br	azilian-Argentine Agency for Accounting an	d Control of Nuclear Materials Concerning Research and
Comment:	Developmen	t in Nuclear I	Material Control, Acc	countanc	y, Verification, an	d Advanced Containment and Surveillance	Technologies for International Safeguards Applications
9/19/1995	9/19/2000	In Force	Primary DOE	True		Arms Control and Nonproliferation	International Safeguards Applications
Title:	Agreement b Material Con	etween the U trol, Account	Inited States Depart tancy, Verification, a	ment of E nd Physi	Energy and the Na Ical Protection, an	ational Nuclear Energy Commission of Brazil	l Concerning Research and Development in Nuclear Technologies for International Safeguards Applications
Comment:			**************************************		· · · · · · · · · · · · · · · · · · ·		
0/14/1997	10/14/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 1 - Coal and Power Systems
	Field of Coal	and Power S	Systems				nzil for Cooperation in the Area of Energy Technology in the
Comment:	Exchange exp	erience and v	views on clean coal te	chnologie	s, advanced powe	r systems, advanced coal preparation, and env	ironmental monitoring technologies and standards.
	10/14/2002	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 2 - Renewable Energy
Title:	Field of Rene	ewable Energ	y				azil for Cooperation in the Area of Energy Technology in th
						ty, policy analysis, and identification of opportu	nities for renewable energy in Brazil.
Comment:		In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3- Energy Efficiency
Comment: 0/14/1997						•	Brazil for Cooperation in the Area of Energy Technology in

tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
6/29/1992		Completed	Statement of Intent	False		Energy Efficiency and Renewable Energy	Solar Energy Based Rural Electrification Program
Title:			n the United States trical Program	Departme	ent of Energy and	I the State of Pernambuco, Federative Republic	of Brazil to Cooperate in the Establishment of a Solar
Comment:	Facilitate join Pernambuco	t activities rela ; training of sy	ated to solar energy be stems and equipmen	ased tech t, etc.	inologies, i.e., 100	0 residential lighting systems in the Sertao de Sao	Francisco region and elsewhere in the Brazilian State of
9/17/2001	9/17/2006	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Extension - Agreement bet. DOE and the National Nuclear Energy Commission
Title:	Developmer	to Extend the nt in Nuclear i Applications	Material Control, Ac	n the Dep countanc	eartment of Energ y, Verification, Pl	y of the United States and the National Nuclear hysical Protection, and Advanced Containment	Energy Commission of Brazil Concerning Research at and Surveillance Technologies for International
Comment	5- year exten	sion					
6/20/2003	6/20/2008	In Force	Primary DOE	True		Science and Technology	Cooperation in Nuclear Energy
Title		between the l in Nuclear E		gy of the (	United States of A	America nd the Ministry of Science and Technol	logy of the Federative Republic of Brazil Concerning
Comment	:						
4/19/2004		In Force	Primary DOE	True			MOU between DOE and the Ministry of Mines Energ of the Federative Republic of Brazil
							of the redefauve republic of brazil
Title	: Memorandu Cooperatior	m of Coopera in Hydroger	ation Between the D n Energy Technolog	epartmen y	nt of Energy of the	e United States of America and the Ministry of N	•
	Cooperation	m of Coopera in Hydroger	ation Between the D n Energy Technolog	у	nt of Energy of the	e United States of America and the Ministry of M	Mines and Energy of the Federative Republic of Brazil t
Comment 4/19/2004	Cooperatior :	In Force	Primary DOE	True			Mines and Energy of the Federative Republic of Brazil to
<u>Comment</u> 4/19/2004 Title	Cooperation: : : Report to Se	In Force	Primary DOE	True		e United States of America and the Ministry of M the status of U.S Brazil Cooperation in Energy	Mines and Energy of the Federative Republic of Brazil a
Comment 4/19/2004 Title Comment	Cooperation:  Report to Se	In Force	Primary DOE	True			Mines and Energy of the Federative Republic of Brazil in Report to Secretary Abraham and Minister Rousseff
Comment 4/19/2004	Cooperation:  Report to Se	In Force	Primary DOE	True			Mines and Energy of the Federative Republic of Brazil to
Comment 4/19/2004 Title Comment ountry: 12/4/1986	Cooperation  Report to Se  Canada  12/4/1996	In Force ecretary Sper  Expired	Primary DOE ncer Abraham and N	True finister Di False	ilma Rousseff on	the status of U.S Brazil Cooperation in Energy  Energy Research and Development	Report to Secretary Abraham and Minister Rousseft  Energy R&D
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Comment 4/19/2004 Title Comment 0untry: 12/4/1986 Title Comment 7/21/1995 Title	Cooperation:  Report to Se:  Canada 12/4/1996: Memorandu and develop: Establishing:	In Force Expired Im of understoment In Force In Force In force In force	Primary DOE ncer Abraham and M Broad sanding between the Statement of Intent	True finister Di False Departm esearch ar False Ses Departi	ent of Energy, Mind development.  Broad ment of Energy a	the status of U.S Brazil Cooperation in Energy  Energy Research and Development ines and Resources of Canada and the U.S. Dep  Energy Efficiency and Renewable Energy and the Department of Natural Resources of Can	Report to Secretary Abraham and Minister Rousseff  Energy R&D  Partment of Energy on collaboration in energy research  Building Energy Simulation Tools
Comment 4/19/2004 Title Comment 12/4/1986 Title Comment 7/21/1995 Title Comment	Cooperation:  Report to Se:  Canada 12/4/1996: Memorandu and develop: Establishing:	In Force Expired Im of understoment In Force In Force In force In force	Primary DOE ncer Abraham and N Broad anding between the statement of Intent een the United State	True finister Di False Departm esearch ar False Ses Departi	ent of Energy, Mind development.  Broad ment of Energy a	the status of U.S Brazil Cooperation in Energy  Energy Research and Development ines and Resources of Canada and the U.S. Dep  Energy Efficiency and Renewable Energy and the Department of Natural Resources of Can	Report to Secretary Abraham and Minister Rousseff  Energy R&D  Partment of Energy on collaboration in energy research  Building Energy Simulation Tools
Comment 4/19/2004 Title Comment 12/4/1986 Title Comment 7/21/1995 Title Comment 8/25/1982	Cooperation:  Report to Set:  Canada 12/4/1996: Memorandu and develor; Establishing:  Statement of: Collaborate if 8/25/1996: Agreement	In Force Expired In Force Expired In Force In Force In Force In Force Expired Expired Expired	Primary DOE  Broad  Broad  Banding between the stion in the areas of researche United State or the United	True finister Di False Departm Essearch ar False So Departi and inform True gy of the	ent of Energy, Mind development.  Broad ment of Energy at ation disseminatio	the status of U.S Brazil Cooperation in Energy  Energy Research and Development ines and Resources of Canada and the U.S. Dep  Energy Efficiency and Renewable Energy and the Department of Natural Resources of Can n.  Civilian Radioactive Waste Management America (of the first part) and Atomic Energy of	Report to Secretary Abraham and Minister Rousseff  Energy R&D  partment of Energy on collaboration in energy research  Building Energy Simulation Tools  ada on Building Energy Simulation Tools  Radioactive Waste Management
Comment 4/19/2004 Title Comment 12/4/1986 Title Comment 7/21/1995 Title Comment 8/25/1982 Title	Cooperation:  Report to Set:  Canada 12/4/1996: Memorandu and develop: Establishing:  Statement of: Collaborate if 8/25/1996: Agreement (of the secons: Study of mut	Expired In Force Expired In Force In Force In Force In Force In Force Expired Expired Expired Expired between the ind part) Responses	Primary DOE  Broad  anding between the statement of Intenter the United State or Simulation R&D and Primary DOE  Department of Energy Secting "Cooperation"	True  false False Departm Essearch ar False False False False False or Departi True gy of the in Radie the mana	ent of Energy, Mind development.  Broad ment of Energy at ation disseminatio  United States of Acactive Waste Ma	the status of U.S Brazil Cooperation in Energy Energy Research and Development ines and Resources of Canada and the U.S. Dep Energy Efficiency and Renewable Energy Ind the Department of Natural Resources of Can Civilian Radioactive Waste Management America (of the first part) and Atomic Energy of	Report to Secretary Abraham and Minister Rousseff  Energy R&D  partment of Energy on collaboration in energy research  Building Energy Simulation Tools  ada on Building Energy Simulation Tools  Radioactive Waste Management  Canada Limited - I'Energie Atomique du Canada Limit
Comment 4/19/2004 Title Comment 12/4/1986 Title Comment 7/21/1995 Title Comment 8/25/1982 Title	Cooperation:  Report to Set:  Canada 12/4/1996: Memorandu and develop: Establishing:  Statement of: Collaborate if 8/25/1996: Agreement (of the secons: Study of mut	Expired In Force Expired In Force In Force In Force In Force In Force Expired Expired Expired Expired between the ind part) Responses	Primary DOE  Broad  anding between the  Statement of Intent een the United State ergy simulation R&D a  Primary DOE  Department of Energy  Deposition associated with	True  false False Departm Essearch ar False False False False False or Departi True gy of the in Radie the mana	ent of Energy, Mind development.  Broad ment of Energy at ation disseminatio  United States of Acactive Waste Ma	the status of U.S Brazil Cooperation in Energy Energy Research and Development ines and Resources of Canada and the U.S. Dep Energy Efficiency and Renewable Energy Ind the Department of Natural Resources of Can Civilian Radioactive Waste Management America (of the first part) and Atomic Energy of	Report to Secretary Abraham and Minister Rousseff  Energy R&D  partment of Energy on collaboration in energy research  Building Energy Simulation Tools  and on Building Energy Simulation Tools
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Comment 4/19/2004 Title Comment 12/4/1986 Title Comment 7/21/1995 Title Comment 8/25/1982 Title Comment 8/23/1983 Title	Cooperation  Report to Se  Canada 12/4/1996 Memorandu and develop Establishing  Statement of Collaborate i 8/25/1996 Agreement (of the seco Study of mut decommission 9/30/1984 Memorandu Environment	Expired In Force Expired In Force In Force In Force In Force In Force In Force Expired Expired between the indigent part) Respired Expired Expired Expired Expired Expired In Force In Force Expired In Force In Force Expired In Force In Fo	Primary DOE  Broad  anding between the  ation in the areas of re  Statement of Intent een the United State ergy simulation R&D a Primary DOE Department of Energoecting "Cooperatio opics associated with and subsurface stora Primary DOE tanding for Cooperation Agency, the Unite	True finister Di False Departm essearch ar False S Departi True gy of the in Radio the mana age, etc. True tition in the	ent of Energy, Mind development.  Broad ment of Energy at ation dissemination  United States of a cactive Waste Management of radioactive Waste Management of radioactive Waste Management of cactive Waste Management Oceanic	Energy Research and Development ines and Resources of Canada and the U.S. Dep Energy Efficiency and Renewable Energy and the Department of Natural Resources of Can Civilian Radioactive Waste Management America (of the first part) and Atomic Energy of anagement* tive waste and related activities of the nuclear fuel Environmental/Pollutation Control	Report to Secretary Abraham and Minister Rousseff  Energy R&D  Partment of Energy on collaboration in energy research  Building Energy Simulation Tools  Radioactive Waste Management  Canada Limited - l'Energie Atomique du Canada Limit  cycle, i.e., preparation and packaging, decontamination ar  Airborne Pollutants  It of Energy of the United States, the United States  sepheric Environment Canada

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	fusion specific	c remote main	ly agreed upon proble tenance technology; inement devices.	ems assoc radiation	ciated with the deve damage of fusion re	elopment of magnetic fusion as a source of energ eactor materials; fusion blanket technology; speci	y in areas as: fusion fuel handling and processing technology ific areas of confinement physics and other plasma
3/18/1998	3/18/2008	In Force	Primary DOE	False		Energy Research and Development	Energy R&D
Title:		m of Understa earch and Dev		Departm	ent of Energy of t	he United States of America and the Departme	ent of Natural Resources of Canada on Collaboration in
Comment:	Establish wid	er areas of co	operation for mutual	benefit			
9/8/1976	12/31/1980	Expired	Primary DOE	False		Nuclear Energy	Radioactive Waste Mgt. and Heavy Water Reactors
Title:	Memorandui in the Nuclea		andingArrangeme	nt betwee	n the U.S. Energy	Research & Development Administration and	I Atomic Energy of Canada Limited Relating to Information
Comment:	Exchange of	information re	lated to managemen	of radioa		stems analysis of heavy water power reactors	
12/24/1986	12/4/1996	Expired	Primary DOE	True	Broad	Information and/or Personnel Exchange	IPR/Information/Personnel Exchange
	exchange of	information	and personnel in er	ergy rese	earch developmer	it	esources of Canada on collaboration in joint planning an
Comment:		to implement of hange of person		rch and d	evelopment activition	es pertaining to energy technologies by providing	Intellectual Property Rights and other legal provisions
2/16/1988	12/4/1996	Expired	Primary DOE	True	Broad	Fossil Energy	Natural Gas Hydrates
	Developmen	it			•		rces of in the area of Natural Gas Hydrates Research and
						search and development.	0.141
2/14/1989	12/31/1996	Expired	Primary DOE	True	Broad	Fossil Energy	Coal/Heavy Oil Coprocessing
	Establish a fr	amework for c	collaboration in the fie	ld of coal/	heavy oil coproces	area of coal/heavy oil coprocessing sing in such technical areas as: (1) feed characte essing and/or utilization; (5) economic and engine	erization and preparation; (2) catalyst development and testing
							borning orandation, and (b) process read.
9/7/1990	12/31/1994	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	In-Situ Combustion With Steam and Oxygen
		Expired	-		•	Fossil Energy	
Title:	U.S. Departn	Expired nent of Energ	-	nergy, M	ines and Resourc	Fossil Energy es of Canada agreement on operation and cor	In-Situ Combustion With Steam and Oxygen
Title: Comment: 6/4/1979	U.S. Departm Joint experim 12/31/1994	Expired nent of Energients to evaluate Expired	y - Department of E ate in-situ combustion Secondary DOE	nergy, M processe True	ines and Resources enhanced by ste Primary DOE	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy	In-Situ Combustion With Steam and Oxygen  ntrol of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands
Title: Comment: 6/4/1979	U.S. Departm Joint experim 12/31/1994	Expired nent of Energients to evaluate Expired	y - Department of E ate in-situ combustion Secondary DOE	nergy, M processe True	ines and Resources enhanced by ste Primary DOE	Fossil Energy es of Canada agreement on operation and cor am and oxygen	In-Situ Combustion With Steam and Oxygen  ntrol of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands
Title: Comment: 6/4/1979 Title:	U.S. Departm Joint experim 12/31/1994 U.S. Departm	Expired nent of Energ ents to evalua Expired nent of Energ	y - Department of E ate in-situ combustion Secondary DOE yy - Department of E	nergy, M processe True nergy, M	ines and Resources enhanced by ste Primary DOE ines and Resourc	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy	In-Situ Combustion With Steam and Oxygen  ntrol of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands
Title: Comment: 6/4/1979 Title:	U.S. Departm Joint experim 12/31/1994 U.S. Departm	Expired nent of Energ ents to evalua Expired nent of Energ	y - Department of E ate in-situ combustion Secondary DOE yy - Department of E	nergy, M processe True nergy, M	ines and Resources enhanced by ste Primary DOE ines and Resourc	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy es of Canada agreement - Annex 1: Resource	In-Situ Combustion With Steam and Oxygen  ntrol of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands
Title: Comment: 6/4/1979 Title: Comment: 2/1/2000 Title:	U.S. Departm Joint experim 12/31/1994 U.S. Departm Joint work be 2/1/2005 Implementin Fuel Cells	Expired ment of Energy ments to evaluate Expired ment of Energy	y - Department of E ate in-situ combustion Secondary DOE yy - Department of E EMR and Alerta and S Secondary DOE ant between the Dep	inergy, M. processe True Inergy, M. Saskatche True True partment of	ines and Resources enhanced by stee Primary DOE ines and Resource Wan in Resource OP Primary DOE of Energy of the U	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy es of Canada agreement - Annex 1: Resource characterization of Oil Fossil Energy	In-Situ Combustion With Steam and Oxygen Introl of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands  characterization of oil sands (tar sands)  DOE/NRCan Fuel Cells Implementing Arrangement
Title: Comment: 6/4/1979 Title: Comment: 2/1/2000 Title:	U.S. Departm Joint experim 12/31/1994 U.S. Departm Joint work be 2/1/2005 Implementin Fuel Cells Automatic Re	Expired ment of Energy ments to evaluate Expired ment of Energy me	y - Department of E ate in-situ combustion Secondary DOE yy - Department of E EMR and Alerta and S Secondary DOE ant between the Depayears with written ag	inergy, M. processe True Inergy, M. Saskatche True True partment of	ines and Resources enhanced by stee Primary DOE ines and Resource Of Primary DOE of Energy of the Unit the participants.	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy es of Canada agreement - Annex 1: Resource characterization of Oil Fossil Energy inited States of America and the Department o	In-Situ Combustion With Steam and Oxygen Introl of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands  characterization of oil sands (tar sands)  DOE/NRCan Fuel Cells Implementing Arrangement  of Natural resources Canada for Cooperation in the area of
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Title: Comment: 6/4/1979 Title: Comment: 2/1/2000 Title: Comment: 2/1/2000 Title: Comment: 11/18/1994	U.S. Departm Joint experim 12/31/1994 U.S. Departm Joint work be 2/1/2005 Implementin Fuel Cells Automatic Re 2/1/2005 Implementin Fossil Fuels Automatic rei	Expired ment of Energy ments to evaluate Expired ment of Energy me	y - Department of E ate in-situ combustion Secondary DOE yy - Department of E EMR and Alerta and S Secondary DOE ant between the Department between the Department between Department between Department between Department between Department with written agrees Statement of Intenti	True True True True True True True True	ines and Resources enhanced by steen Primary DOE ines and Resource Of Primary DOE of Energy of the United Interpretation of the Unit	Fossil Energy es of Canada agreement on operation and cor am and oxygen Fossil Energy es of Canada agreement - Annex 1: Resource characterization of Oil Fossil Energy inited States of America and the Department of Fossil Energy d States of America and the Department of Na Energy Efficiency and Renewable Energy	In-Situ Combustion With Steam and Oxygen Introl of in-situ combustion with steam and oxygen  Resource Characterization of Tar Sands Characterization of oil sands (tar sands)  DOE/NRCan Fuel Cells Implementing Arrangement of Natural resources Canada for Cooperation in the area of  DOE/NRCan Fossil Fuels Implementing Arrangement of Steam Resources Canada for Cooperation in the area of  Biennial Biomass Conf. of the Americas
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All Bilate	E - I D - I	0	T.	1 11	Danish Time	DOE Office	Brief Description
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
9/30/1991	11/1/1995		Secondary DOE	True	Primary DOE	Civilian Radioactive Waste Management	Subsidiary Agreement #2 Technical Coop Program
Title	: Subsidiary a	igreement no	. 2 between Atomic	Energy o	of Canada Limited	and the U.S. Department of Energy for a radioa	ctive waste management technical cooperation progra
Comment	: INITIATION	OF TECHNICA	AL TASKS (8)				
9/13/1982	12/31/1994	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Steam Flooding w/Additive in Tar Sands
	Developmen	nt of Tar Sand	ls (Oil Sands) and H	eavy Oil		greement II Under the Memorandum of Unders	
						nhanced by various additives for recovery of oil fro	Information Dissemination in Tar Sands
9/13/1982		Expired	Secondary DOE	True	Primary DOE	Fossil Energy	
	Sands) and	Heavy Oil	ation" implementing intar sands and heavy	_	ient III Under the N	Memorandum of Understanding for Cooperation	n in the Research and Development of Tar Sands (Oil
2/28/1986	12/31/1994	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Monitoring Frontal Movements in Thermal Recovery
					•	<u>.                                    </u>	anding for Cooperation in the Research and Developme
	of Tar Sand	s (Oil Sands)	and Heavy Oil			I shape and location of thermal fronts in steamflood	
			Statement of Intent		Broad	Energy Efficiency and Renewable Energy	Biennial Biomass Conf. of the Americas
11/18/1994 Title		In Force					
				-		d the Department of Mines and Resources on E	Dieliliai Biolilass Collielelice of Alliericas
				ne iatesti	results in biomass e	energy research and development.	
							Arrangement between DOE and Dont of Natural
10/22/2001	10/22/2006 e: Implementin	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Arrangement between DOE and Dept. of Natural Resources Canada Natural Resrouces Canada for Cooperation in the area
Title	10/22/2006 e: Implementing of Microgen	In Force ng Arrangeme eration and C	Primary DOE ent between the Dep community Energy S	True artment of Systems		Energy Efficiency and Renewable Energy  nited States of America and the Department of	Resources Canada  Natural Resrouces Canada for Cooperation in the area
Title Comment 5/10/2000	10/22/2006 e: Implementing of Microgen t: 5/10/2005	In Force og Arrangeme eration and C	Primary DOE ent between the Dep community Energy S Primary DOE	True artment of Systems True	of Energy of the U	Energy Efficiency and Renewable Energy  nited States of America and the Department of a  Science and Technology	Resources Canada  Natural Resrouces Canada for Cooperation in the area  Cooperation in the area of Bioenergy
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Title Comment 5/10/2000 Title Comment 6/17/2003 Title	10/22/2006 a: Implementir of Microgen t: 5/10/2005 a: Implementir t: 6/17/2008 a: Implementir Collaboratio	In Force	Primary DOE ent between the Dep community Energy S  Primary DOE ent between the Unit  Primary DOE ent between the Unit of Nuclear Energy I	True  artment of Systems  True  red States  ted States  Research	of Energy of the U	Energy Efficiency and Renewable Energy  nited States of America and the Department of  Science and Technology  nergy and the Department of Natural Resources  Nuclear Energy  nergy and the Department of Natural Resources	Resources Canada  Natural Resrouces Canada for Cooperation in the area  Cooperation in the area of Bioenergy s of Canada for Cooperation in the area of Bioenergy
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10/22/2001 Title Comment 5/10/2000 Title Comment 6/17/2003 Title	10/22/2006 a: Implementir of Microgen t: 5/10/2005 a: Implementir t: 6/17/2008 a: Implementir Collaboratio	In Force	Primary DOE ent between the Dep community Energy S  Primary DOE ent between the Unit  Primary DOE ent between the Unit of Nuclear Energy I	True  artment of Systems  True  red States  ted States  Research	of Energy of the U	Energy Efficiency and Renewable Energy  nited States of America and the Department of  Science and Technology  nergy and the Department of Natural Resources  Nuclear Energy  nergy and the Department of Natural Resources	Resources Canada  Natural Resrouces Canada for Cooperation in the area  Cooperation in the area of Bioenergy s of Canada for Cooperation in the area of Bioenergy  Nuclear Energy Research
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tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
			•			Energy Commission of Chile to cooperate in ties related to deployment of clean coal technology.	•
2/13/1994			Statement of Intent			Energy Efficiency and Renewable Energy	Renewable and Energy Efficiency Technologies
Title:	: Joint Statem Nacional de	ent of Intent Energia of th	on Renewable Ener e Republic of Chile	gy and E	nergy Efficiency t	echnologies between the Department of Ener	gy of the United States of America and the Comision
Comment:	: Intent to coop	erate in a mai	nner to facilitate joint	activities	related to renewabl	e energy and energy efficiency technologies in a	an environmentally and economically responsible way.
1/18/1998	4/12/2000	In Force	Statement of Intent	False		Energy Efficiency and Renewable Energy	Natural Gas-Powered Bus Pilot Project
Title:	: Statement of	Intent Conce	erning the Natural G	as-Powe	red Bus Pilot Proj	ect in the Metropolitan Region of Chile	
Comment:	: Signed in Sar	itiago, Chile, c	during the SOAII				
3/7/1995		In Force	Statement of Intent	False		Energy Efficiency and Renewable Energy	Control Emissions of Greenhouse Gases
Title:	Statement of Energy of th	Intent for Su United State	istainable Developn es of America and t	nent Coo he Natio	peration and Joins nal Energy Commi	t Implementation of Measures to Control Emis ssion of Chile	ssions of Greenhouse Gases Between the Department o
Comment:	: Intent to facili renewable en	ate the develo	opment of joint imple gies; education and t	mentation raining pr	projects in order to ograms, etc.	encourage: market deployment of greenhouse	gas-reducing technologies, including energy efficiency and
ountry:	China						
1/31/1979	4/30/2001	In Force	Intergovernmental	True		Science and Technology	Gov't to Gov't S&T
Title:	: Agreement b	etween the G	Sovernment of Unite	d States	of America and th	ne Government of People's Republic of China	on Cooperation in Science and Technology
	: Need copy of					•	,
8/28/1979	8/24/1984	Expired	Intergovernmental	True		Energy Efficiency and Renewable Energy	Hydroelectric Power
	Water Resou	ween the Gov rces	vernment of the Uni	ted State	s of America and	the Government of the People's Republic of (	China on Cooperation in Hydroelectric Power and Relate
Comment: 10/29/1997		In Force	Intergovernmental	False	<u> </u>	Faces and Facination	F
	. Ilmita d Stata		•		hina Engany and i	Energy and Environment	Energy and Environment Cooperation Initiative
Comment:		o Americai	n and reopie's Repl	iblic of C	nına Energy and i	Environment Cooperation Initiative	
2/23/1995	•	Completed	Statement of Intent	False		Energy Efficiency and Renewable Energy	Renewable Energy
	· I atter of Inte	•			the United States		the People's Republic of China to Develop Cooperative
	Activities in Utilization	the Areas of i	Renewable Energy	Under the	Protocol for Coo	peration in the Fields of Energy Efficiency an	nd Renewable Energy Technology Development and
	: Intent to deve				operative activities	s in the area of renewable energy development for	or rural areas in China.
2/23/1995		•	Statement of Intent			Information and/or Personnel Exchange	Energy Information Exchange
Title:	Statement of Information	Intent betwe Exchange	en the Department	of Energy	y of the United Sta	ites of America and the State Statistical Bure	au of the People's Republic of China on an Energy
Comment:	Protocol for the	e Exchange o	of Energy Information	was sign	ed with the Nationa	I Bureau of Statistics on January 12, 2000. See	ID - 522
2/23/1995		In Force	Statement of Intent	False		Nuclear Energy	Research Reactor Fuel
Title:	Statement of Reactor Fuel	Intent betwe	en the Department	of Energ	of the United Sta	ites of America and the China Atomic Energy	Authority of the People's Republic of China on Research
					conversion of resea	rch reactors to the use of low enriched uranium.	
0/29/1997	6/29/1998		Statement of Intent			Nuclear Energy	Peaceful Uses of Nuclear Technologies
	: Agreement o Planning Co	f Intent on Commission of	ooperation Concern the People's Repub	lic of Chi	na		nergy of the United States of America and the State
	•	–					
	•	Nuclear Tecl	hnologies was signed Primary DOE	in Beijing False	g on June 29, 1998	Bilateral Energy Consultations	Bilateral Energy Consultations

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All Bliater	ral Agreeme	ents					
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:			energy consultations ies, programs and te			an Ministerial Working Group to enhance the und	derstanding of energy issues and promote the exchange of
5/11/1983	4/30/2001	In Force	Primary DOE	True	Intergovernmental	Fusion Energy	Protocol on Nuclear Physics and Magnetic Fusion
Title:	: Protocol bet the Fields of	ween the Dep Nuclear Phys	partment of Energy sics and Controlled	of the Un Magnetic	ited States of Ame C Fusion Research	rica and the Ministry of Science and Technolo	ogy of the People's Republic of China on Cooperation in
Comment:	: Cooperate in	promoting eac	ch other's program in	Nuclear F	Physics and Controll	ed Magnetic Fusion. Co-terminates with umbrel	a S&T agreement.
4/16/1985	4/30/2001	•	Primary DOE		Intergovernmental	σ,	Fossil Energy R&D
Title:	: The Protoco Coal Industr	l on Cooperat y of the Peop	tion in the Field of I le's Republic of Ch	Fossil Ene ina	ergy Research and	Development between the Department of En	ergy of the United States of America and the Ministry of
				d on April		vill be continued subject to the new Protocol follo	wing approval by the Permanent Coordinating Group.
10/13/1987	4/30/2001	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 5 - Atmospheric Fluidized Bed Combustion Info Exchange
Title:			ooperation in field of d (AFB) combustion			n U.S. Department of Energy - Ministry of Coa	al Industry of the People's Republic of China in the area of
Comment	: EXCHANGE	OF REPORTS	S AND DATA. Co-ten	minates w	ith Protocol		
4/12/1994		-	Secondary DOE		Primary DOE	Fossil Energy	Annex 9 - Clean Coal Technology
	Ministry of C Commission	Coal Industry	of the People's Rep	oublic of C	China for Cooperati	esearch and Development between the Depar ion between the United States Department of Technology Utilization	tment of Energy of the United States of America and the Energy and the State Science and Technology
Comment:							
6/27/1994	1/13/1997		Secondary DOE	True	Primary DOE	Fossil Energy	Annex 10 - Coal-Fired MagnetoHydroDynamic Power Generation
Title:	Ministry of C	coal Industry	or Cooperation in th of the People's Rep rea of Coal-Fired Ma	ublic of c	hina for Cooperati	on between the United States Department of a	ment of Energy of the United States of America and the Energy and the Institute of Electrical Engineering of the
Comment	: Define the re- cycle test fac	sponsibilities in ility in Beijing f	n a cooperative unde for experimentation in	rtaking rel n convertir	ating to the proposang the energy of coa	al to install and operate a USDOE-owned U-25 so I combustion gases directly into electricity.	uperconducting magnet for use in a coal-fired MHD combined
2/23/1995	2/23/2000	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 11 - Coal Bed Methane Recovery and Utilization
Title	: Annex XI to Ministry of C	the Protocol ( Coal Industry	for Cooperation in t of the People's Rep	the Field of C	of Fossil Energy Re China for Cooperate	esearch and Development between the Depar ion in the Area of Coalbed Methane Recovery	tment Energy of the United States of America and the and Utilization
Comment			economic cooperation cant natural gas ener			ery and utilization technology in order to make po	sitive contributions toward improving recovery efficiency and
2/23/1995	2/23/2000		Secondary DOE		Primary DOE	Fossil Energy	Annex 12 - Regional Climate Research
Title	: Annex XII to Ministry of C	the Protocol Coal Industry	on Cooperation in a of the People's Rep	the Field oublic of C	of Fossil Energy R China for Cooperat	esearch and Development between the Depar ion in the Area of Regional Climate Research	tment Energy of the United States of America and the with the China Meteorological Administration
Comment		rogram of joint mate change.	R&D and informatio	n exchang	e to document region	onal climate and climate change, to predict region	nal climate and climate change and to identify regional
6/27/1995	6/27/2000	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 1 - 100 Counties Renewable Energy
Title:	Ministry of S	icience and T ural Energy D	echnology of the P	eople's R	epublic of China fo	or Developing Cooperative Activities in the Ar	ent of Energy of the United States of America and the ea of Renewable Energy Under the Hundred Counties nerica and the Ministry of Agriculture of the People's
Comment	: Remains in fo	orce for five ye	ars or until termination	on of the F	rotocol, whichever	occurs first	
10/25/1996	10/25/2001	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 2 - Wind Energy Development
Title	: Wind Energy the People's between the	Developmer Republic of C Department	nt in China Develop China ANNEX II und of Energy of the Un	ing Coop ler the Pr ited State	erative Activities b otocol for Coopera is of America and t	etween the Department of Energy of the Unite tion in the Fields of Energy Efficiency and Re the State Science and Technology Commissio	ed States of America and the Ministry of Electric Power of mewable Energy Technology Development and Utilization on of the People's Republic of China
Comment	: Remains in fo	orce for five ye	ears or until termination	on of the F	rotocol, whichever	occurs first.	•

All Bilater	ral Agreeme	ents					
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
11/18/1997	11/18/2002	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 5 - Electric Vehicle Development
Title:	: The Departn Efficiency ai	nent of Energ nd Renewable	y of the United State Energy Technolog	tes of Ame gy Develo	erica and the Minis pment and Utilization	try of Science and Technology of the People's F on Annex V Electric Vehicle and Hybrid-Electric	Republic of China for Cooperation in the Field of Energ • Vehicle Development
Comment:	: Remains in fo	orce for five ye	ars or until terminati	on of the F	Protocol, whichever o	occurs first.	
2/23/1995	2/22/2005	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Protocol for Energy Efficiency and Renewable Energy
	States of An	erica and the	e Ministry of Science	e and Ted	chnology of the Ped	ople's Republic of China	tion between the Department of Energy of the United
Comment:	: Desire to con information o	duct bilateral on energy polic	energy consultations ies, programs and te	by forming chnologies	g a Chinese-America s.	an Ministerial Working Group to enhance the under	standing of energy issues and promote the exchange of
1/31/1979	4/30/2001	In Force	Primary DOE	True	Intergovernmental	High Energy Physics	High Energy Physics
Title:	: Implementin Field of High	g Accord bet Energy Phys	ween the U.S. Depa sics.	artment of	Energy and the St	ate Scientific and Technological Commission o	f the People's Republic of China on Cooperation in the
Comment:	: Co-Terminate	s with the S&	T Agreement				
11/4/1992	11/4/2002	In Force	Primary DOE	True	Intergovernmental	High Energy Physics	Superconducting Super Collider
Title:	: Implementin	g Accord bet	ween the U.S. Depa	artment of	Energy and the Ch	ninese Academy of Sciences for a Program of C	ollaboration on the Superconducting Super Collider
Comment:							
3/15/1980	8/28/1981	Expired	Primary DOE	True	-	Energy Efficiency and Renewable Energy	Hydropower
Title:	: Annex I to the and Related	ie Protocol be Water Resou	etween the Governi rces Management	ment of th	e United States of	America and the Government of the People's Ro	epublic of China on Cooperation in Hydroelectric Pow
Comment:	: Description n	ot available in	History			7.0.5	
10/25/1996		In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3 - Energy Efficiency
Title:	: Annex III to a of the United the United S	the Protocol t I States of An tates of Ame	for Cooperation in t merica and the Stat rica and the State F	the Fields e Science Planning C	of Energy Efficience and Technology Commission of the l	cy and Renewable Energy Technology Develops ommission of the People's Republic of China fo People's Republic of China in the Area of Energ	ment and utilization between the Department of Energy or Cooperation Between the Department of Energy of y Efficiency
Comment:	: Remains in fo	orce for five ye	ars or until terminati	on of the P	rotocol, whichever o	occurs first	
3/13/1986	5/22/1991	Terminated	Secondary DOE	True	Primary DOE	Fusion Energy	Annex 1 - IPR
Title:	: Annex I to th America and	e Protocol o I the State Sc	n Cooperation in th ience and Technolo	e Fields o ogy Comn	f Nuclear Physics and single of the Peop	and Controlled Magnetic Fusion Research betw le's Republic of China	een the Department of Energy of the United States of
	: Replaced by	the IPR Annex	k I of the Gov't to Go	v't S&T Ag	reement signed on M	May 22, 1991	
4/16/1985	5/22/1991	Expired	Secondary DOE		Primary DOE	Fossil Energy	Annex 1 - IPR
	Ministry of C	coal Industry	of the People's Rep	oublic of C	China		nt of Energy of the United States of America and the
			k I of the Gov't to Go			May 22, 1991.	
9/28/1987	4/30/2001		Secondary DOE	True	Primary DOE	Fossil Energy	Annex 2 - Mine Safety and Health
Title:	: Annex II to to Ministry of C	he Protocol o Coal Industry	on Cooperation in the of the People's Rep	ne Field of oublic of C	FFossil Energy Res China in the Area of	earch and Development between the Departme Mine Safety and Health	nt of Energy of the United States of America and the
	: Co-terminate						
8/19/1987	4/30/2001		Secondary DOE	True	Primary DOE	Energy Research and Development	Annex 3 - Atmospheric Trace Gasses
				D on Coo	peration in the fiel	d of atmospheric trace gases	
	: Co-terminate						
10/13/1987		In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 4 - Coal Preparation & Waste Stream Utilization
	of coal prepa	aration and w	aste stream utilizat	tion			Industry of the People's Republic of China in the area
						SIBLE FURTHER COOPERATION IN COAL PREF	
11/18/1997	11/18/2002	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 6 - Geothermal Production and Use

Start Date	End Date	Status	Agreement Type	Legally	Parent Type	DOE Office	Brief Description
Title:	People's Rep	oublic of Chir	na Annex VI under 1	The Proto	col for cooperation	partment of Energy of the United States of Ame in the Field of Energy Efficiency and renewal the State Science and Technology Commissio	erica and the Ministry of Science and Technology of the ble Energy Technology Development and Utilization n of the People's Republic of China
Comment	Remains in fo	orce for five ye	ears or until termination	on of the F	rotocol, whichever	occurs first.	•
1/12/2000	1/12/2005	In Force	Primary DOE	True	Intergovernmental	Information and/or Personnel Exchange	Exchange of Energy Information
Title:			Concerning the Ex Republic of China	change o	f Energy Information	on between the Department of Energy of the U	nited States of America and the National Bureau of
Comment:	<u> </u>						
4/20/2000	4/20/2010	In Force	Primary DOE	True	Intergovernmental	•	Fossil Energy Protocol
Title:	Protocol for Ministry of S	Cooperation Science and T	in the Field of Foss echnology of the P	il Energy eople's R	Technology Developublic of China	lopment and Utilization between the Departme	nt of Energy of the United States of America and the
Comment	Remains in fo	orce for 5 year	rs from date of signat	ure or as I	ong as the Umbrella	a Agreement (US-China S&T) remains in force, w	hichever is shorter.
3/29/1999		In Force	Statement of Intent	False		Energy and Environment	MOU on Clean Energy Projects and Technologies
Title:	Memorandu Department	m of Underst of Energy, an	anding Among The nd Export Import Ba	State Dev	elopment Plannin United States Reg	g Commission of the People's Republic of Chi arding Cooperation on Clean Energy Projects	na, China Development Bank, The United States and Technologies
Comment	<u></u>						
12/7/2000	12/7/2005	In Force	Secondary DOE	True		Fossil Energy	Annex IV - Energy and Environmental Technologies
Title:	: Annex IV to America and	the Protocol I the Ministry	on Cooperation in t of Science and Tec	he Field o hnology	of Fossil Energy Te of the Peoples's R	echnology Development and Utilization betwee epublic of China for Cooperation in the area of	en the Department of Energy of the United States of f Energy and Environmental Technologies
Comment	:						
11/14/1997	11/14/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 13 - Fossil Fuel Utilization
Title:						Research and Development between the Depa f Fossil Fuel Utilization for Production of Chei	rtment of Energy of the United States of America and the micals
Comment	: Co-terminiate	s with Protoco	ol				
7/9/1998		In Force	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Design Criteria for Energy Efficient Building
Title:	Statement of	f Work betwe	en the Department	of Energy	of the United Stat	es of America and the Ministry of Science and	Technology of the People's Republic of China
Comment							
	11/14/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 14 - Bilateral Consultations on Coal Industry
Title	: Annex XIV to Ministry of C	o the Protoco Coal Industry	of the People's Rep	the field oublic of C	of Fossil Energy F China on Bilateral (	Research & Development between the Departm Consultations and Exchanges on Coal Industry	nent of Energy of the United States of America and the y Development and Information
	: Co-terminate	•					
6/29/1998	6/29/2003	in Force	Primary DOE	True		Nuclear Energy	Nuclear Technologies Agreement
Title			Department of Energ Peaceful Uses of N			merica and the State Development Planning Co	ommission of the People's Republic of China on
Comment	: Subject to the	Gov't to Gov	't Peaceful Uses of N	uclear En	ergy Agreement sig	ned July 23, 1985.	
6/29/1998	6/29/2003	In Force	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 1 - IPR
Title	: Annex I- Inte	illectual Prop	erty				
Comment	Attached to o	riginal agreem	nent.				
11/19/2002	11/19/2007	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex II - Cooperation in the area of Clean Fuels
Title	: Annex II to t America and	he Protocol o I The Ministry	on Cooperation in the y of Science and Te	ne Field or chnology	f Fossil Energy Teo of the People's Re	chnology Development and Utilization between epublic of China for Cooperation in the Area of	n The Department of Energy of the United States of Clean Fuels
Comment	:		· · · · · · · · · · · · · · · · · · ·				
7/18/2001		In Force	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Design Criteria for Energy Efficient Building

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tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:		to The States public of Chir		9, 1998	between The Dep	artment of Energy of the United States of Americ	a and The Ministry of Science and Technology of the
Comment:							
12/7/2000	12/7/2005	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex III - for Cooperation in the areas of Oil and Gas
Title:						echnology Development and Utilization between epublic of China for Cooperation in the areas of (	the Department of Energy of the United States of Oil and Gas
Comment:					···		
5/11/2000	5/11/2005	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex VII
	Planning Co		and Planning Anne the People's Repub			s Between the Department of Energy of the Unite	d States of America and the State Development
Comment:							
2/12/2002	2/12/2007	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex II - The State Power Corporation of China
Title:	Agreement ( Cooperative	o Extend And Activities in	nex II to the Protoco Wind Development	l for Coo <sub>l</sub> in China	peration in the Fie between the Depa	olds of Energy Efficiency and Renewable Energy Ortment of Energy of the United States of America Ortment of Energy of the United States of America	Technology Development and Utilization for and the State Power Corporation of China
Comment:							
2/12/2002	2/12/2007	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex III - State Planning Commission
Title:		tive Activities				ion in the Fields of Energy Efficiency and Renew t of Energy of the United States of America and t	able Energy Technology Development and Utilization he State Planning Commission of the People's
Comment:							
2/12/2002	2/12/2007	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex IV - State Economic and Trade Commission
	for Coopera Commission	tive Activities	l Amend Annex IV to s in Renewable Ener le's Republic of Chir	by Busin	ocol for Cooperates Development	tion in the Fields of Energy Efficiency and Renew between the Department of Energy of the United	able Energy Technology Development and Utilization States of America and the State Economic and Trade
Comment:				, <u></u>			
10/29/2003	10/29/2008	In Force	Primary DOE	True			Annex V - Development of Electric-Drive and Fuel Ce Vehicle Technologies
Title:	The Departn Efficiency a	nent of Energ nd Renewable	y of the United State e Energy Technolog	es of Ame y Develo	erica and the Mini oment and Utiliza	stry of Science and Technology of the People's F tion - Annex V Development of Electric-Drive and	Republic of China for Cooperation in the Field of Energ Fuel Cell Vehicle Technologies
Comment:							
1/12/2004	1/12/2010	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Protocol Agreement - Summer Olympic Games in Beijing
1/12/2004			·		es for the 2008 Su	Energy Efficiency and Renewable Energy  mmer Olympic Games in Beijing	
1/12/2004	: Protocol for		·		es for the 2008 Su		
1/12/2004 Title:	: Protocol for		·		es for the 2008 Su		
1/12/2004 Title: Comment: 1/12/2004	1/12/2009	In Force	in Clean Energy Te Primary DOE een the Department	True	of the United Sta	mmer Olympic Games in Beijing Science and Technology	Statement of Intent between DOE and China
1/12/2004 Title: Comment: 1/12/2004	1/12/2009  Statement of Cooperation	In Force	in Clean Energy Te Primary DOE een the Department	True	of the United Sta	mmer Olympic Games in Beijing  Science and Technology  Ites of America and the China Atomic Energy Aut	Beijing
1/12/2004 Title: Comment: 1/12/2004 Title:	1/12/2009  Statement of Cooperation	In Force	in Clean Energy Te Primary DOE een the Department	True of Energy luclear En	of the United Sta	mmer Olympic Games in Beijing  Science and Technology  Ites of America and the China Atomic Energy Aut	Beijing  Statement of Intent between DOE and China

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Statement o	f Intent betwe	een DOE and CAEA	Dillolling	<u> </u>		
Comment:	:						
5/23/2004	5/23/2009	In Force	Primary DOE	True		Bilateral Energy Policy Dialogue	MOU bet. DOE and Republic of China on Bilateral Energy
Title:			anding between the Iteral Energy Policy			the United States of America and the National D	evelopment and Reform Commission of the People's
Comment:		,					
10/25/1996	10/25/2001	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 4 - Renewable Energy Business Development
Title:			ess Development A People's Republic		Cooperative Activ	vities between the Department of Energy of the	United States of America and the State Economic and
Comment:	: Remains in f	orce for five ye	ears or until termination	n of the F	rotocol, whichever	r occurs first	
11/19/2005	11/19/2008	In Force	Primary DOE	True			MOU bet. DOE and China - (GACC) & (AQSIQ)
Title:							Supervision, Inspection, and Quarantine of the People' he Illicit in Nuclear and other Radioactive Material
Comment	:						
4/20/2005	4/20/2010	In Force	Extension	True			Extension for agreement bet. DOE and MOST
	States of An					l Energy Technology Development and Utilizati eople's Republic of China	on between the Department of Energy of the United
Comment							
0/0/000				False		A 6 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
9/2/2005		In Force	Statement of Intent	1 4130		Arms Control and Nonproliferation	Joint Statement of Intent
Title	Supervision	nent of Intent	by the Department	of Energy	of the United Sta 's Republic of Ch	ates of America and the Customs General Admi	Joint Statement of Intent nistration, the General Administration of Quality luclear and other Radioactive Material Detection
Title:	Supervision	nent of Intent , Inspection a	by the Department on the department of the depar	of Energy e People	of the United Sta 's Republic of Ch	ates of America and the Customs General Admi ina Concerning Exploration of Cooperation in N	nistration, the General Administration of Quality luclear and other Radioactive Material Detection
Title: Comment: 9/10/2002	Supervision :	nent of Intent , Inspection a In Force	by the Department of the Department of the Statement of Intent	of Energy e People False	's Republic of Ch	ates of America and the Customs General Admi ina Concerning Exploration of Cooperation in N Science and Technology	nistration, the General Administration of Quality luclear and other Radioactive Material Detection  SOI - Clean Energy Technologies
Comment: 9/10/2002 Title:	Supervision  Statement of Energy Tecl	nent of Intent , Inspection a In Force of Intent betwe	by the Department of the Department of the Statement of Intent	of Energy e People False	's Republic of Ch	ates of America and the Customs General Admi ina Concerning Exploration of Cooperation in N Science and Technology	nistration, the General Administration of Quality luclear and other Radioactive Material Detection
Comment: 9/10/2002 Title: Comment:	Supervision  Statement of Energy Tech	nent of Intent , Inspection a In Force f Intent betwe hnologies	by the Department of the Department of the Statement of Intent	of Energy e People False	's Republic of Ch	ates of America and the Customs General Admi ina Concerning Exploration of Cooperation in N Science and Technology	nistration, the General Administration of Quality luclear and other Radioactive Material Detection  SOI - Clean Energy Technologies
Comment: 9/10/2002 Title: Comment: Country:	Supervision  Statement of Energy Tech  Costa Rica	nent of Intent , Inspection a In Force f Intent betwee hnologies	by the Department and Quarantine of the Statement of Intenterent the Department	of Energy e People False of Energ	's Republic of Ch	ates of America and the Customs General Admi ina Concerning Exploration of Cooperation in N Science and Technology ates of America and the Municipality of Beijing	nistration, the General Administration of Quality luclear and other Radioactive Material Detection  SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean
Comment:  9/10/2002 Title: Comment: Country: 5/9/1997	Supervision  Statement of Energy Tech  Costa Rica 5/9/2002	In Force In Force In Force In Force In Force	by the Department and Quarantine of the Statement of Intent seen the Department  Statement of Intent	of Energy e People False of Energy False	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy	nistration, the General Administration of Quality luclear and other Radioactive Material Detection  SOI - Clean Energy Technologies
Comment:  9/10/2002 Title:  Comment: Country: 5/9/1997	Supervision  Statement of Energy Tecl  Costa Rica 5/9/2002  Statement of Electric Train	In Force In Force In Force In Force In Force	by the Department and Quarantine of the Statement of Intent seen the Department  Statement of Intent	of Energy e People False of Energy False	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy	nistration, the General Administration of Quality fuclear and other Radioactive Material Detection  SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean
Comment:  9/10/2002 Title:  Comment: Country: 5/9/1997 Title:	Supervision  Statement of Energy Tecl  Costa Rica 5/9/2002  Statement of Electric Train	In Force	by the Department and Quarantine of the Statement of Intent seen the Department  Statement of Intent	of Energy e People False of Energy False	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy	nistration, the General Administration of Quality fuclear and other Radioactive Material Detection  SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean
Comment: 9/10/2002 Title: Comment: Country: 5/9/1997 Title: Comment: 6/1/1989	Supervision  Statement of Energy Tech  Costa Rica 5/9/2002  Statement of Electric Train	In Force In Force In Force In Force In Force In Force Completed	by the Department and Quarantine of the Statement of Intent een the Department  Statement of Intent e Ministry of Environ	of Energy e People False of Energy False nment an	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy a Rica and the Department of Energy of the Unit	sistration, the General Administration of Quality fuclear and other Radioactive Material Detection  SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean  Electric Transport ted States of America for Cooperation in the Field of
Comment: 9/10/2002 Title: Comment: 5/9/1997 Title: Comment: 6/1/1989 Title:	Supervision  Statement of Energy Tecl  Costa Rica 5/9/2002  Statement of Electric Train  U.S. Departic: Enhance energy	In Force In Intent by the Insport  Completed Intent of Energy In Force In F	by the Department and Quarantine of the Statement of Intent seen the Department  Statement of Intent se Ministry of Environ  Primary DOE  By - Ministry of Nature of Price of Nature of Price of Nature of Price of Nature of Price of Price of Nature of Price of	False False False True True True True True True True Tru	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy a Rica and the Department of Energy of the Unit  Fossil Energy d Mining of Costa Rica technical cooperation ar technologies can contribute to fuel diversity, and the	SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean Electric Transport ted States of America for Cooperation in the Field of Clean Coal Technologies rangement for deployment of clean coal technologies
Comment: 9/10/2002 Title: Comment: 5/9/1997 Title: Comment: 6/1/1989 Title:	Supervision  Statement of Energy Tech  Costa Rica 5/9/2002  Statement of Electric Train  U.S. Departs  Enhance energoperation is 896-7297	In Force In Intent by the Insport  Completed Intent of Energy In Force In F	by the Department and Quarantine of the Statement of Intent seen the Department  Statement of Intent se Ministry of Environ  Primary DOE  By - Ministry of Nature of Price of Nature of Price of Nature of Price of Nature of Price of Price of Nature of Price of	False False False True True True True True True True Tru	's Republic of Ch	ates of America and the Customs General Admina Concerning Exploration of Cooperation in N  Science and Technology ates of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy a Rica and the Department of Energy of the Unit  Fossil Energy d Mining of Costa Rica technical cooperation ar technologies can contribute to fuel diversity, and the	SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean Electric Transport ted States of America for Cooperation in the Field of Clean Coal Technologies rangement for deployment of clean coal technologies te program will also promote increased economic DE/HQ CONTACT: Peter Cover, FE-4, (202) 586-7297; FT
Comment:  9/10/2002 Title: Comment: Country: 5/9/1997 Title: Comment: 6/1/1989 Title: Comment: 11/17/1998	Supervision  Statement of Energy Teck  Costa Rica 5/9/2002  Statement of Electric Trans  U.S. Departs  Enhance energoperation is 896-7297  11/17/2003  Arrangement	In Force In Force In Force In Force In Force In Force In Intent by the Insport  Completed In Force	by the Department and Quarantine of the Statement of Intention the Department  Statement of Intention of Intention the Department  Statement of Intention Intention of Intenti	False True ral Resouthe way ce. VISITS	's Republic of Ch	Actes of America and the Customs General Admina Concerning Exploration of Cooperation in Notice Science and Technology attes of America and the Municipality of Beijing  Energy Efficiency and Renewable Energy at Rica and the Department of Energy of the Unite Fossil Energy at Mining of Costa Rica technical cooperation are technologies can contribute to fuel diversity, and the MENTS: No DURATION: To Be Determined DO	SOI - Clean Energy Technologies of the People's Republic of China Concerning Clean Electric Transport ted States of America for Cooperation in the Field of  Clean Coal Technologies rangement for deployment of clean coal technologies te program will also promote increased economic SE/HQ CONTACT: Peter Cover, FE-4, (202) 586-7297; FTS

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	ral Agreeme	;;;t3	7		T		
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
10/22/1991	10/22/2001	In Force	Intergovernmental	True		Science and Technology	Science & Technology
Title:	: Agreement b Cooperation		Sovernment of the C	zech and	l Slovak Federal Re	public and the Government of the United States of	of America for Scientific and Technological
Comment:						ations between the two countries in the areas of basioneir useful utilization, standardization, S&T policy and	c science, environmental protection, medical sciences I management.
Country: 1	Egypt						
7/1/1999	7/1/2004	In Force	Primary DOE	False		Energy Research and Development	Energy Technology Agreement
Title:	: Implementin Cooperation	g Arrangeme in Energy Te	nt between the Dep echnology	artment c	of Energy of the Un	ited States of America and the Ministry of Electric	city and Energy of the Arab Republic of Egypt for
Comment:	:						
2/23/2000	2/23/2005	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 1 - Renewable Energy
	Egypt in the	e Implement Field of Rene	ing Arrangement be ewable Energy	tween the	e Department of En	ergy of the United States of America and the Mini	istry of Electricity and Energy of the Arab Republic
Comment:			0 1 005		D DOE	Form Fig. 1	A 0 F - 10-11-
2/23/2000	2/23/2005	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 2 - Fuel Cells
	of Egypt for	ne impiement Cooperation	ing Arrangement b in Energy Technolo	etween the	Field of Fuel Cells	nergy or the United States of America and the Min	istry of Electricity and Energy of the Arab Republic
Comment:		<u> </u>					
_	Equatorial		D: 00#				MOUL A BOE - LE - MAIN DE LA
8/6/2004	8/6/2009	In Force	Primary DOE	False	4.65	Science and Technology	MOU bet. DOE and Equatorial Guinea
l itle:	Equatorial G	m of Understa uinea for Co	anding between the operation on Energy	Policy,	ent of Energy of the Science and Techn	e United States of America and the Ministry of Mil ology, and Energy Technology Demonstration	nes, industry and Energy of the Republic of
Comment	:		•				
Country:	Estonia						
3/13/1995	3/13/2000	In Force	Primary DOE	True		Environmental Restoration and Waste Management	Technical Cooperation in Clean-up Paldiski Site
Title		m of Underst Nuclear Trair		Departm	ent of Energy of th	e United States and the Ministry of Economy of E	stonia for Technical Cooperation in the Clean-up of
Comment			ests and objectives in site at Paldiski, Esto		ental restoration and	I in the safe and effective management of hazardous	wastes and the clean-up of the environment at and
2/4/2000	2/4/2003	In Force	Primary DOE	True		Fossil Energy	Oil Shale Research and Utilization
Title			Department of Energy Research and Utili		United States of An	nerica and the Ministry of Economic Affairs of the	Republic of Estonia for Scientific and Technology
Comment	: Establishes a	Joint Coordin	ating Committee to r	nanage c	ooperative work und	er the agreement.	
ountry:	European /	Atomic Ene	ergy Community	(EURA	TOM)		
5/27/1964	•	Expired	Primary DOE	True	•	Nuclear Energy	Fast Reactors
Title	: Agreement l	etween the U	J.S. Atomic Energy	Commiss	ion and the Europe	ean Atomic Energy Community	
Comment	: Comprehens	ive exchange	of information concer	ning fast r	eactors.		
7/7/1986	7/31/1991	Expired	Primary DOE	True		Environmental Safety Health	Health & Environmental Effects of Radiation
Title	: Memorandu European C	m of Understommunities o	anding between the concerning research	United S	tates Department o leal and Environme	f Energy and the European Atomic Energy Comn ntal Effects of Radiation	nunity represented by the Commission of the
Commont	· Cooperation	on a range of	R&D aspects of radia	ation prote	ction in areas such a	as source and dose determination; environmental pro	cesses and effects; somatic health effects; genetic health

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	12/15/1996			Binding			
		Renegotiatin g	Primary DOE	True		Fusion Energy	Magnetic Fusion
Comment:	Agreement fo	or Cooperatio	on between the Eur	opean Ate	omic Energy Com	munity and the United States Department of Er	nergy in the field of Controlled Thermonuclear Fusion
			eration between EUI nagnetic fusion pow		nd DOE in the area	s covered by their respective magnetic fusion prog	grams in order to develop the scientific understanding and
7/21/1992	7/21/1999	Expired	Primary DOE	True		Fusion Energy	ITER
Title:			ropean Atomic Ene ntal Reactor (ITER)	ergy Comi	nunity, Japan, Ru	ssia, and the United States on cooperation in t	the engineering design activities of the International
Comment:			ssia shall conduct jo r future decisions on			Activities (EDA) to produce a detailed, complete, a	and fully integrated engineering design of ITER and all
1/28/1982	12/31/1992	Expired	Primary DOE	True		Arms Control and Nonproliferation	Nuclear Materials Safeguards
	the Field of N	luciear Mater	ial Safeguards Res	earch and	l Development	•	nunities and the United States Department of Energy in
					eguards inspectors	s and specialists in order to enhance the effectiven	
10/6/1982	10/6/1992	Expired	Primary DOE	True		Civilian Radioactive Waste Management	Rad Waste
	Energy and t	he European	Atomic Energy Co	mmunity			e Wastes between the United States Department of
					•		zation of waste forms and disposal in geologic formations
5/5/1987	12/31/1991	Expired	Secondary DOE		Primary DOE	Fusion Energy	JET Pellet Fueling
	European To	rus (JET) und	dertaking	_	•	ration on fusion research and development bet	tween the U.S. Department of Energy and the Joint
4/14/1988	12/1/1991	Expired	pellet injection on log Secondary DOE		Primary DOE	Fusion Energy	Collaborative Particle Control Program
		•	•		•	the U.S. Department of Energy and the Joint E	3
	•		•	•	•	h a collaborative program on particle control. Expi	
3/6/2003	3/6/2008	In Force	Primary DOE	True	o.g, coulds anoug	m a conaporativo program on particle control. Exp.	Technoial Exchange and Cooperation Arrangement
	Technical Ex	change and	Cooperation Arrang			ment of Energy of the United States of America Field of Nuclear-Related Technology Research	a and the European Atomic Energy Community as
Comment:							
10/20/1988	12/31/1990	Expired	Secondary DOE	True	Primary DOE	Fusion Energy	Lower Hybrid Experiments on ASDEX
Title:	Implementing Understanding IPP and the (	ng for the Lo	on a Cooperative F wer Hybrid Experin	Program f nents on A	or the Investigation ASDEX between to	on of Toroidal Physics, and Plasma Technologi he European Atomic Energy Community and th	es of, Tokamaks with Poloidal Field Divertors Annex I ar ne Maz-Panck -Institute for Plasmaphysik, Acting through
Comment:	Determining t regime.	he stability an	d confinement of the	tokamak,	principally with str	ong auxiliary heating, and energy confinement with	n high power LH heating alone in a typical tokamk density
3/1/1991	12/15/1996	Expired	Secondary DOE	True	Primary DOE	Fusion Energy	Fast Ions and Alpha Particles
Title:			ve fusion program on of European Co			son scattering diagnostic system for fast ions	& alpha particles between Joint European Torus (JET)
Comment:	Installation ar	nd preliminary	operation of diagnos	tic at JET			
3/21/1994	7/21/1999	Completed	Secondary DOE	True	Primary DOE	Fusion Energy	ITER Engineering Design Activities
	ITER Engine						
					lementation for de	cisions on future construction, operation, exploitati	
1/6/1995	1/6/2005	In Force	Primary DOE	True		International Safeguards	EURATOM Safeguards
Title:	Agreement by the field of N	etween the E luclear Materi	uropean Atomic Er ials Safeguards Re	nergy Cor search an	nmunity Represei	nted by the Commission of the European Comr	nunities and the United States Department of Energy in

tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
1/6/1996	1/6/1997	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 1 - Advanced Video Surveillance Technology Development
Title:			ment of Energy (De ance Technology D			ic Energy Community represented by the C	Commission of European Communities (EURATOM) for
Comment:	<u> </u>						
6/12/1996	6/12/1998	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 3 - EMC-HPGe Detectors
Title:	: Action Shee Electromeci	t 3 between T nanically-Coo	The Euratom Safego led Germanium De	uards Dire tectors fo	ctorate of the Co r Safeguards	mmission of European Communities and th	e Department of Energy (DOE) of USA for
Comment:							
4/16/1998	4/16/2000	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 4a - SYNTH Gamma-ray spectra simulation software
Title:						European Atomic Energy Community repre amma-ray Spectra Simulation System	sented by the Commission of European Communities
Comment:							
10/2/1997	10/2/1999	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 6 - Underwater neutron measurements of fresh MOX fuel
Title:			The Euratom Safeg Fresh MOX fuel	uards Dire	ectorate of the Co	mmission of European Communities and Tl	he Department of Energy (DOE) of USA for Underwater
Comment:	<u> </u>		a-				
4/16/1998	4/16/2000	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 7 - Windows 95/NT Interface to MGA
	(EURATOM)		d States Department 95/NT Interface to		gy (DOE) and The	European Atomic Energy Community repre	esented by The Commission of European Communities
Comment: 4/16/1998	4/16/1999	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 8 - Isotopic Analysis Evaluation using th PC/FRAM Physics Software
Title:	: Action Shee (EURATOM)	t 8 - The Unite	ed States Departm Analysis Evaluation	ent of Ene n using th	rgy (DOE) and Th e PC/FRAM Physi	e European Atomic Energy Community rep cs Software	resented by The Commission of European Communities
Comment:	:						
4/16/1998	4/16/2000	Completed	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 9 - Development of a glass fibre optic measurement system
Title			ed States Departm nent of a glass fibr				resented by The Commission of European Communities
Comment:	<u>:</u>						
2/18/1999	2/18/2001	In Force	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 10 - Tank Analysis
Title:						he European Atomic Energy Community re on and Real-Time Analysis of Volume Meast	presented by The Commission of European Communities urement Data
Comment			<del></del>				
4/6/2003	4/6/2008	In Force	Primary DOE	True		Energy Research and Development	Fusion Energy Research and Development
Title			on between the Eur rica in the Field of				the European Communities and the Department of Energy
	:						
Comment							

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment	: Support the o	lesign, develo	opment, construction a		ion of a system to	process and handle the deuterium-tritium fuel whi	ch shall be utilized during the operation of the JET device
5/14/2001	5/14/2006	In Force	Primary DOE	True		Fusion Energy	Fusion Agreement between EURATOM and DOE
Title	: Agreement f	or Cooperati	ion between the Eur	opean Ato	mic Energy Com	nmunity Represented by the Commission of the	European Communities and the Department of Energy
	the United S	tates of Ame	erica in the Field of F	usion Ene	ergy Research ar	nd Development	
Comment							
•	European U		04-4			· · -	
2/17/1982		•	Statement of Intent			Energy Efficiency and Renewable Energy	Renewable Energy
						le Energy Sources Research and Development	
2/26/1991	8/31/1992	Expired	Statement of Intent		stations; Photovo	Energy Production; energy production from w	
		•			nergy and the E	Energy Research and Development uropean Communities on the study of fuel cycle	Study of Fuel Cycle Costs
			y and data in fuel cyc		nergy and the Li	mopean Communities on the study of fuel cycle	ecosts
5/6/1987	5/7/1997	Expired	Primary DOE	True	- <del></del>	Fusion Energy	Tore Supra (CEA)
Title	: Agreement of Atomic Ener	n collaborat	ion on fusion R&D i	n Tore Su	ora between U.S	•	riat A L'energie Atomique acting on behalf of European
Comment	: Provide expe	rt personnel, (	data on design and ei	ngineering	of advanced hard	ware and unique hardware elements with full DOE	participation
1/18/1978	12/31/1981	Expired	Primary DOE	False		Nuclear Energy	Fast Reactor Safety
Title	: Arrangemen	t for the Coll	aboration between t	he EEC-W	AC Group and D	OE in the field of Whole Core Accident Compa	•
Cammant	: Comparison o	of results from	calculations porform		Albala Cara Assid	•	
Comment	accidents.		- calculations penoim	ea by the v	Whole Core Accid	ent Code (WAC) Working Group and DOE experts	for LMFBR "Loss of flow" (LOF) and "transient overpower"
6/17/2003	accidents. 6/17/2008	In Force	edit test	True	whole Core Accid	ent Code (WAC) Working Group and DOE experts	for LMFBR "Loss of flow" (LOF) and "transient overpower"  Amendment relating to Cooperation in the area of Fue Cells
6/17/2003	6/17/2008: Amendment	In Force	edit test	True	the Department o	of Energy of the United States of America and t	Amendment relating to Cooperation in the area of Fu
6/17/2003	6/17/2008: Amendment	In Force	edit test	True	the Department o	of Energy of the United States of America and t	Amendment relating to Cooperation in the area of FucCells
6/17/2003	6/17/2008  : Amendment Scientific an	In Force	edit test	True	the Department o	of Energy of the United States of America and t	Amendment relating to Cooperation in the area of FucCells
6/17/2003 Title	6/17/2008  : Amendment Scientific an	In Force	edit test menting Agreement ical Cooperation rel	True	the Department o	of Energy of the United States of America and to Area of Fuel Cells	Amendment relating to Cooperation in the area of Funcells  the European Commission, for Non-nuclear Energy
6/17/2003  Title  Comment 5/14/2001	6/17/2008  : Amendment Scientific an : 5/14/2006 : Implementin	In Force to the Implet d Technolog In Force g Agreement	edit test menting Agreement ical Cooperation rel Primary DOE t between the Depar	True between to ating to Co	the Department o	of Energy of the United States of America and the Area of Fuel Cells  Science and Technology	Amendment relating to Cooperation in the area of Funderland Colls  The European Commission, for Non-nuclear Energy  Non-Nuclear Energy S&T Agreement
6/17/2003  Title  Comment  5/14/2001  Title	6/17/2008  : Amendment Scientific an : 5/14/2006 : Implementin Technologic	In Force to the Implet d Technolog In Force g Agreement	edit test menting Agreement ical Cooperation rel Primary DOE t between the Depar	True between to ating to Co	the Department o	of Energy of the United States of America and to Area of Fuel Cells	Amendment relating to Cooperation in the area of Fu Cells  The European Commission, for Non-nuclear Energy  Non-Nuclear Energy S&T Agreement
G/17/2003  Title  Comment  5/14/2001  Title  Comment	accidents. 6/17/2008  : Amendment Scientific an : 5/14/2006 : Implementin Technologic	In Force to the Implet d Technolog In Force g Agreement	edit test menting Agreement ical Cooperation rel Primary DOE t between the Depar	True between to ating to Co	the Department o	of Energy of the United States of America and the Area of Fuel Cells  Science and Technology	Amendment relating to Cooperation in the area of Fu Cells  The European Commission, for Non-nuclear Energy  Non-Nuclear Energy S&T Agreement
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6/17/2003  Title  Comment 5/14/2001 Title: Comment: country: 11/6/1980 Title: Comment: 1/17/1997	scidents. 6/17/2008  : Amendment Scientific an Scientific an Scientific an Technologic: : Implementin Technologic: : Memorandur: : Finding solutionsafeguards on 1/17/2001	In Force to the Impleted Technolog In Force g Agreemental Co-operations connected to energy production force	edit test  menting Agreement ical Cooperation rel  Primary DOE t between the Depar ion  Primary DOE tanding between U.S d with increasing the uction; advanced ene Primary DOE	True  True	the Department of cooperation in the cooperation in	of Energy of the United States of America and to Area of Fuel Cells  Science and Technology ted States of America and the European Comm  Energy Research and Development d the Finnish Ministry of Trade and Industry of ith the design, development, construction and opeating technology; biomass and peat technology.  Energy Research and Development	Amendment relating to Cooperation in the area of Fu Cells  The European Commission, for Non-nuclear Energy  Non-Nuclear Energy S&T Agreement sission for Non-Nuclear Energy Scientific and  Energy R&D for Cooperation in Energy Research and Development ration of alternative energy systems, i.e., environmental
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itart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment	:						
10/23/1990	10/23/1995	Expired	Primary DOE	True		Energy Research and Development	1990 Energy R&D MOU
Title	: Memorandu Research ar	m of Undersi nd Developm	anding between the	Departm	ent of Energy of	the United States of America and the Ministry o	f Trade and Industry of Finland for Cooperation in Ener
Comment	:						
Country:	France						
10/27/1983		In Force	Secondary DOE	False	Primary DOE	Environmental Restoration and Waste Management	Radioactive Waste ManagementWest Valley
Title	: Statement o	f Intent betw	een the United State	s Departr	nent of Energy a	nd the French Commissariat a l'Energie Atomiq	ue on the West Valley Demonstration Project
	: Cooperate in	the areas of t		ve waste a	and decontaminati		course of the DOE Demonstration Project at the Western Ne
6/20/1986		In Force	Secondary DOE	False	Primary DOE	Civilian Radioactive Waste Management	Low-Level Radioactive Waste
Title	: Statement o	f Intent betw	een the United State	s Departi	ment of Energy a	nd the French Commissariat a l'Energie Atomiq	ue in the Field of Low-Level Radioactive Waste
							ge of low-level radioactive waste, as well as defined activitie
10/19/1981	10/19/1986	Expired	Primary DOE	True		Nuclear Energy	Research Reactor Fuel
Title	: Agreement l	etween the	United States Depar	tment of l	Energy and the C	Commissariat a l'Energie Atomique of France on	Cooperation in the Field of Research Reactor Fuel
	Performance	9					
	Performance	9	ment research reacto	or fuels.			
Comment 6/9/1982	Performance: Developing re 12/31/1987	e educed enrich Expired	Primary DOE	False		Information and/or Personnel Exchange	Energy-Related Information
Comment 6/9/1982 Title	Performance: Developing re 12/31/1987 : Memorandu Energy Info	educed enrich Expired m of Underst mation	Primary DOE anding between the	False	ent of Energy of		Energy-Related Information  ommissariat a l'Energie Atomique for the Exchange of
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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Balanced exc	hange of ener	gy information to cor	·	energy R&D activitie	es in the respective countries	<del></del>
5/7/1976	5/7/1981	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Solar Energy
Title:	Memorandur	n of Understa	anding Between the	United S	tates Energy Rese	arch and Development Administration and the Fro	ench National Center for Scientific Research for
Commont	-		earch on Solar Ther		-		
1/18/1977	9/30/1991	Expired	ods of providing altern Primary DOE	True	rgy sources	Nuclear Energy	Fact Breader Baceton
			•		lar Pasetors hatwa	en United States Department of Energy and the F	Fast Breeder Reactors
			BR cooperation and			en onited States Department of Energy and the F	rench Commissarial A L energie Alomique
9/29/1977	12/31/1979	Expired	Primary DOE	False	<i>y</i>	Energy Efficiency and Renewable Energy	Solar Energy
		•	•		tates Energy Resea		ench Centre National de La Recherche Scientifique o
	certain Safet	y Aspects of	Solar Towers	0	anco Energy Mood	aron and bottophion Administration and the Fig	mon dentie Mational de La Neonerone delenanque d
Comment:	Cooperative p	orogram to acc	quire information abo	ut the risk	s involved in the use	e of fields of heliostas with solar towers and how to m	inimize those risks.
5/9/2000	5/9/2005	In Force	Primary DOE	True		Defense Programs	DOE/DGA Emerging Technologies
Title:	: Technical Ar Application (	rangement b of Emerging	etween the Departn Technologies	nent of En	ergy of the United	States of America and the Minster of Defense of	the French Repubic Concerning Cooperation in the
	: Auto Renewa	l for 5 year pe	riods.				
12/1/1989	12/1/1994	Expired	Primary DOE	False		Classified	Subject/Contents Classified
	: Subject/Con						
	Description ne		· · _ ·				
	12/29/2002	In Force	Primary DOE	True		Arms Control and Nonproliferation	Material Control and Accounting
Title:	· Anroomont h						
	Field of Nucl	lear Material (	Control and Accoun	iy or the t iting Meas	Inited States and ti Sures	he Commissariate a l'Eenergie Atomique of Franc	ce Concerning Research and Development in the
Comment:	Field of Nucl	lear Materiai (	Control and Accoun	ting Meas	sures		ce Concerning Research and Development in the
	Field of Nucl	lear Materiai (	Control and Accoun	ting Meas	sures	the Commissariate a l'Eenergie Atomique of France clear material control and accounting measures.  Arms Control and Nonproliferation	Physical Protection of Nuclear Materials
12/29/1997	Field of Nucl Cooperate on 12/29/2002	research, develored in Force	Control and Account velopment, testing ar Primary DOE Department of Energ	ting Meas d evaluati True v of the U	sures on in the area of nuc	clear material control and accounting measures.  Arms Control and Nonproliferation	<u> </u>
12/29/1997 Title:	Field of Nucl Cooperate on 12/29/2002 Agreement b of Physical F	lear Material ( research, dev In Force petween the D Protection of	Control and Account velopment, testing ar Primary DOE Department of Energ Nuclear Materials a	ting Meas d evaluati True ny of the U	sures on in the area of nuc United States and to les	clear material control and accounting measures.  Arms Control and Nonproliferation the Commissariat a l'Energie Atomique of France	Physical Protection of Nuclear Materials
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12/29/1997 Title: Comment: 4/26/1995	Field of Nucl Cooperate on 12/29/2002 Agreement b of Physical F Improve the U 4/26/2005	lear Material ( research, dev In Force petween the E Protection of JS & France n In Force	control and Account velopment, testing and Primary DOE Department of Energy Nuclear Materials and Primary DOE	ting Meas d evaluati True ny of the U nd Faciliti facilities p	on in the area of nuc Jnited States and to es hysical protection pr	clear material control and accounting measures.  Arms Control and Nonproliferation  the Commissariat a l'Energie Atomique of France  rocedures  High Energy Physics	Physical Protection of Nuclear Materials  Concerning Research and Development in the Field  Accelerator Driven Technology
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12/29/1997     Title: Comment: 4/26/1995     Title: Comment: 9/20/1995     Title: Comment: 10/8/1995     Title: Comment: 10/30/1969     Title:	Field of Nucl Cooperate on 12/29/2002 Agreement b of Physical F Improve the L 4/26/2005 Agreement b Technology Conduct coop 9/20/2000 Agreement b Cooperation i economic app geologic form 10/8/2000 Agreement b Cooperate for 10/30/1972 Memorandur of Nuclear S	In Force In	velopment, testing ar Primary DOE Department of Energy Nuclear Materials and Uclear materials and Primary DOE Department of Energy am of scientific and testing DOE Department of Energy Coopenment of radioactive velocar energy. Coopenmental and safety is Primary DOE United States Department of States Department of States Department DOE United States Department States Department States Department States Department States Department States Department DOE United States Department States Department DOE United States Department States Department DOE Department DOE Department of Energy Coopenment States Department States Department States Department States Department DOE Department of Energy Coopenment States Department States States Department States States States States Department States	rue true true true true true true true t	Juited States and the search of the search o	Arms Control and Nonproliferation the Commissariat a l'Energie Atomique of France rocedures High Energy Physics Energie Atomique for Cooperation in Research D th, development and application for accelerator drive Civilian Radioactive Waste Management Inch Commissariat a l'Energie Atomique in the fiel mizing the consequences of radioactive contamination of geologic formations; field/laboratory testing; pres Civilian Radioactive Waste Management Fional Radioactive Waste Management Agency of tion on health and environment and promoting safe a Information and/or Personnel Exchange Typ Commission and the French Commissariat a 'I	Physical Protection of Nuclear Materials  Concerning Research and Development in the Field  Accelerator Driven Technology evelopment and Application for Accelerators driven In technology Radioactive Waste Management In on health and environment and promoting the safe and paration/packaging of radioactive wastes; disposal in  Radioactive Waste Management France in the Field of Radioactive Waste Management Exchange Nuclear S&T Information

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Implementin	g Agreemen	t between DOE and	the Frenc	h Commissariat a	a l'Energie Atomique in the area of Waste Im	mobilization Technology
Comment:	Establish and	carry out a jo	oint development and	testing pr	ogram to investiga	te the performance of cement based waste form	ns for the immobilization of radioactive wastes.
9/15/1987	9/15/1992	Expired	Secondary DOE	True	Primary DOE	Civilian Radioactive Waste Management	Radiation Hardening
Title:	Implementin Applications	g Agreement to High Rad	t between DOE and liation Fields	the Frenc	h Commissariat a	a l'Energie Atomique in Reduction Hardening	g of Remote Maintenance Control System Hardware for
Comment:	Joint develop	ment and test	t program to investiga	te the per	formance of radiat	ion-hardened control system hardware in the ra	diation environment of TOR-404
11/19/1994		In Force	Secondary DOE		Primary DOE	Defense Programs	Megajoule-Class Solid State Lasers - IA #1
	Information	Related to M	egajoule-class Solid	l State La	sers		mission concerning Sharing of Science and Technology
Comment:	Sharing of sp	ecific S&T info	ormation related to m	egajoule-d	class solid state las	sers.	
11/19/1994	8/9/2004	In Force	Secondary DOE	True	Primary DOE	Defense Programs	Megajoule-Class Solid State Laser Technology - IA #2
	State Laser	Technology					nergie Atomique on Cooperation in Megajoule-Class Solid
Comment:	Implement co and support s	operative acti systems)	ivities in research and	developr	ment in megajoule-	class solid state laser technology (high-power, l	high-energy solid state lasers and target experimental chambers
7/9/2001	7/9/2006	In Force	Secondary DOE	True	Primary DOE	Nuclear Energy	Advanced Nuclear Reactor Science and Technology (I NERI)
	for Coopera	tion in Advan	iced Nuclear Reacto	r Science	nt between the De e and Technology	partment of Energy of the United States of A	America and Commissariat A L'Energie Atomique of France
			gy Research Initiative				
3/14/2000	3/14/2002	In Force	Secondary DOE	True	Primary DOE	International Safeguards	Action Sheet 3 - Nuclear Materials Transportation
						· ·	Security
Title: Comment:		t No. 3 The U	nited States Depart	ment of E	nergy (DOE) and	· ·	
Comment: 8/24/2004	8/24/2010	In Force	Primary DOE	True		the Commissariat a l'Energie Atomique of Fi	Security  rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement
Comment: 8/24/2004	8/24/2010 Implementin and The Cor	In Force	Primary DOE	True	Eiaht Pins in the	the Commissariat a l'Energie Atomique of Fi	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of America
Comment: 8/24/2004 Title:	8/24/2010 Implementin and The Cor	In Force	Primary DOE ent Concerning Irrad l'Energie Atomique	True	Eiaht Pins in the	the Commissariat a l'Energie Atomique of Fi Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Ti	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology
Comment: 8/24/2004 Title: Comment: 9/18/2000	8/24/2010 Implementin and The Cor 9/18/2005 Agreement I	In Force g Arrangeme nmissariat a	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Ener	True liation of of France True	Eight Pins in the e for Cooperation	the Commissariat a l'Energie Atomique of Fi Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Ti Nuclear Energy	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of America
Comment: 8/24/2004 Title: Comment: 9/18/2000	8/24/2010 Implementin and The Cor  9/18/2005 Agreement Is Reactor Science	In Force g Arrangeme nmissariat a' In Force	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Ener	True liation of of France True	Eight Pins in the e for Cooperation	the Commissariat a l'Energie Atomique of Fi Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Ti Nuclear Energy	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology  Advanced Nuclear Reactor
Comment: 8/24/2004 Title: Comment: 9/18/2000 Title:	8/24/2010 Implementin and The Cor  9/18/2005 Agreement Is Reactor Science	In Force g Arrangeme nmissariat a	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Ener	True liation of of France True	Eight Pins in the e for Cooperation	the Commissariat a l'Energie Atomique of Fi Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Ti Nuclear Energy	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology  Advanced Nuclear Reactor Atomique of France for Cooperation in Advanced Nuclear
Comment: 8/24/2004	8/24/2010 Implementin and The Cor  9/18/2005 Agreement It Reactor Scientification 1/20/2001 Action Shee	In Force g Arrangementssariat at In Force petween The ence and Tec In Force In Force	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Energinal hnology  Secondary DOE	True liation of of France  True gy of the	Eight Pins in the e for Cooperation  United States of A	the Commissariat a l'Energie Atomique of Financia Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Time Nuclear Energy America and The Commissariat A L'Energie of Arms Control and Nonproliferation	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology  Advanced Nuclear Reactor Atomique of France for Cooperation in Advanced Nuclear  Action Sheet 2 - Isotopic Analysis Evaluation Using the
Comment: 8/24/2004	8/24/2010 Implementin and The Cor 9/18/2005 Agreement It Reactor Scientification Sheep PC/FRAM Pi	In Force g Arrangementssariat at In Force petween The ence and Tec In Force In Force	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Energinal Primary DOE Secondary DOE	True liation of of France  True gy of the	Eight Pins in the e for Cooperation  United States of A	the Commissariat a l'Energie Atomique of Financia Nuclear Energy Phenix Reactor under the Agreement between in Advanced Nuclear Reactor Science and Time Nuclear Energy America and The Commissariat A L'Energie of Arms Control and Nonproliferation	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology  Advanced Nuclear Reactor Atomique of France for Cooperation in Advanced Nuclear  Action Sheet 2 - Isotopic Analysis Evaluation Using the PC/FRAM Physics Isotopics Software
Comment: 8/24/2004	8/24/2010 Implementing and The Cornal The Co	In Force Expired	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Energinal Primary DOE Inited States Departics Software	True liation of of France  True gy of the  True  ment of E	Eight Pins in the e for Cooperation  United States of A  Primary DOE	the Commissariat a l'Energie Atomique of Financia de l'Energie Atomique of Financia de l'Energie Atomique of Financia en Advanced Nuclear Reactor Science and Time Advanced Nuclear Reactor Science and Time Commissariat A L'Energie Atomique (CN)  The Commissariat a l'Energie Atomique (CN)  Defense Programs	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americ Technology  Advanced Nuclear Reactor Atomique of France for Cooperation in Advanced Nuclear  Action Sheet 2 - Isotopic Analysis Evaluation Using the PC/FRAM Physics Isotopics Software IEA) of France for Isotopic Analysis Evaluation Using the
Comment: 8/24/2004	8/24/2010 Implementing and The Constant Indianal The Constant Indianal Indi	In Force g Arrangementssariat at In Force petween The ence and Tec In Force In Force t No. 2 The Unysics Isotop Expired	Primary DOE ent Concerning Irrac l'Energie Atomique  Primary DOE Department of Energinal Primary DOE Inited States Departics Software	True liation of of France  True gy of the  True  ment of E	Eight Pins in the e for Cooperation  United States of A  Primary DOE	the Commissariat a l'Energie Atomique of Financia de l'Energie Atomique of Financia de l'Energie Atomique of Financia en Advanced Nuclear Reactor Science and Time Advanced Nuclear Reactor Science and Time Commissariat A L'Energie Atomique (CN)  The Commissariat a l'Energie Atomique (CN)  Defense Programs	Security rance (CEA) for Nuclear Transportation Security  DOE/CEA FUTURIX Agreement en the Department of Energy of the United States of Americal Technology  Advanced Nuclear Reactor  Atomique of France for Cooperation in Advanced Nuclear  Action Sheet 2 - Isotopic Analysis Evaluation Using the PC/FRAM Physics Isotopics Software  IEA) of France for Isotopic Analysis Evaluation Using the
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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment	:	.1	•		<u> </u>		
8/1/1989	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 1 - High Energy Laser Work Statement
Title	: Task 1 - Higi	h Energy Las	er Work Statement		•	-	
Comment	:						
1/1/1990	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 2 Phebus Work Statement
Title	: Task 2 Pheb	us Work Stat	ement				
Comment	:						
8/11/1989	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 3 Laser Experiments with Smooth Beams
Title			s with Smooth Bean	ns Work	Statement		
Comment	:						
8/1/1989	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 4 - High Z Laser Plasma
Title	: Task 4 High-	Z Laser Plas	ma Interaction Phys	ics Work	Statement		
Comment	:		_				
8/1/1989	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 5 Laboratory X-Ray Laser Studies Work Studies
Title	: Task 5 Labo	ratory X-Ray	Laser Studies Work	Stateme	nt .	-	•
Comment	:						
8/1/1989	12/31/1990	Completed	Secondary DOE	True	Primary DOE	Defense Programs	Task 6 Neutron Diagnostics Development
Title	: Task 6 Neuti	ron Diagnost	ics Development We	ork State	ment	•	•
	_	=					
Comment	:						
1/2/2002	1/2/2007	In Force	Statement of Intent	True		Exchange of Information on Research in Life Sciences	SOI between DOE and France
1/2/2002	1/2/2007 : Statement o	f Intent Betwe			y of the United S	Sciences	SOI between DOE and France gie Atomique of France Concerning Exchange of
1/2/2002	1/2/2007 : Statement of Information	f Intent Betwe	een the Department		y of the United S	Sciences	
1/2/2002 Title	1/2/2007 : Statement of Information	f Intent Betwe	een the Department		y of the United St	Sciences	
1/2/2002 Title: Comment: 3/13/2002	1/2/2007 : Statement of Information: : 3/12/2007	f Intent Betwoon Research	een the Department in Life Sciences Primary DOE	of Energ		Sciences tates of America and the Commissariat A' L'Energ Computer Sciences	gie Atomique of France Concerning Exchange of  Computer Sciences
1/2/2002 Title: Comment: 3/13/2002	1/2/2007 : Statement or Information : 3/12/2007 : Agreement It Sciences	f Intent Betwoon Research	een the Department in Life Sciences Primary DOE	of Energ		Sciences tates of America and the Commissariat A' L'Energ Computer Sciences	gie Atomique of France Concerning Exchange of
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1/2/2002 Title Comment 3/13/2002 Title Comment 3/13/2002	1/2/2007  : Statement or Information : 3/12/2007 : Agreement Esciences : 3/13/2007 : Agreement I	Intent Between Research In Force between the L In Force between the L	een the Department in Life Sciences  Primary DOE Department of Energy Primary DOE	of Energ  True  gy of the  True gy of the	United States of A	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Aton	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship
1/2/2002 Title Comment 3/13/2002 Title Comment 3/13/2002	1/2/2007  : Statement or Information : 3/12/2007 : Agreement is Sciences : 3/13/2007 : Agreement is Fundamenta	Intent Between Research In Force between the L In Force between the L	een the Department in Life Sciences  Primary DOE Department of Energ  Primary DOE Department of Energ	of Energ  True  gy of the  True gy of the	United States of A	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Atom  Fundamental Science	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship
1/2/2002 Title Comment 3/13/2002 Title Comment 3/13/2002 Title	1/2/2007  : Statement or Information : 3/12/2007 : Agreement is Sciences : 3/13/2007 : Agreement is Fundamenta	Intent Between Research In Force between the L In Force between the L	een the Department in Life Sciences  Primary DOE Department of Energ  Primary DOE Department of Energ	of Energ  True  gy of the  True gy of the	United States of A	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Atom  Fundamental Science	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship
1/2/2002     Title     Comment 3/13/2002     Title     Comment 3/13/2002     Title     Comment 5/23/2002	1/2/2007  : Statement of Information : 3/12/2007 : Agreement It Sciences : 3/13/2007 : Agreement It Fundamental: : 5/23/2007	In Force between the L	Primary DOE	True True True True True Ty of the Stewards True	United States of A United States of A hip	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Atom  Fundamental Science America and the Commissariat A' L'E'nergie Atom	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship nique of France Concerning Cooperation in  Radioactive Waste Management Agreement
1/2/2002     Title     Comment 3/13/2002     Title     Comment 3/13/2002     Title     Comment 5/23/2002	1/2/2007  : Statement or Information : 3/12/2007 : Agreement is Sciences : 3/13/2007 : Agreement is Fundamenta : 5/23/2007 : Agreement is Management	In Force between the L	Primary DOE	True True True True True Ty of the Stewards True	United States of A United States of A hip	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Atom  Fundamental Science America and the Commissariat A' L'E'nergie Atom  Civilian Radioactive Waste Management	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship nique of France Concerning Cooperation in  Radioactive Waste Management Agreement
1/2/2002 Title Comment 3/13/2002 Title Comment 3/13/2002 Title Comment 5/23/2002 Title Comment	1/2/2007  : Statement or Information : 3/12/2007 : Agreement Is Sciences : 3/13/2007 : Agreement Is Fundamenta : 5/23/2007 : Agreement Is Management	In Force between the L	Primary DOE	True True True True True Ty of the Stewards True	United States of A United States of A hip	Sciences tates of America and the Commissariat A' L'Energ  Computer Sciences America and the Commissariat A' L'E'nergie Atom  Fundamental Science America and the Commissariat A' L'E'nergie Atom  Civilian Radioactive Waste Management	gie Atomique of France Concerning Exchange of  Computer Sciences nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship nique of France Concerning Cooperation in  Radioactive Waste Management Agreement
1/2/2002     Title     Comment 3/13/2002     Title Comment 3/13/2002     Title Comment 5/23/2002     Title Comment 12/19/1988	1/2/2007  : Statement or Information : 3/12/2007 : Agreement It Sciences : 3/13/2007 : Agreement It Fundamenta it S/23/2007 : Agreement It Managemen : 9/19/1991	In Force between the L In Force	Primary DOE	True gy of the  True gy of the  True gy of the  True gy of the	United States of A United States of A hip United States of A	Sciences tates of America and the Commissariat A' L'Energie Computer Sciences America and the Commissariat A' L'E'nergie Atom Fundamental Science America and the Commissariat A' L'E'nergie Atom Civilian Radioactive Waste Management America and the Commissariat A L'Energie Atom Defense Programs	Computer Sciences  nique of France Concerning Exchange of  Computer Sciences  nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship  nique of France Concerning Cooperation in  Radioactive Waste Management Agreement  ique of France in the field of Radioactive Waste
1/2/2002     Title     Comment 3/13/2002     Title     Comment 3/13/2002     Title     Comment 5/23/2002     Title     Comment 12/19/1988     Title	1/2/2007  : Statement or Information : 3/12/2007 : Agreement Is Sciences : 3/13/2007 : Agreement Is Fundamenta : 5/23/2007 : Agreement Is Management : 9/19/1991 : U.S. Departri	In Force between the Last Science Sustained Texpired Texp	Primary DOE  OPPRIMARY DOE  OPPRIMAR	True True True True True True True True	United States of A United States of A hip United States of A	Sciences tates of America and the Commissariat A' L'Energie Computer Sciences America and the Commissariat A' L'E'nergie Atom Fundamental Science America and the Commissariat A' L'E'nergie Atom Civilian Radioactive Waste Management America and the Commissariat A L'Energie Atom Defense Programs	Computer Sciences  nique of France Concerning Exchange of  Computer Sciences  nique of France Concerning Cooperation in Computer  Fundamental Science on Stockpile Stewardship  nique of France Concerning Cooperation in  Radioactive Waste Management Agreement  ique of France in the field of Radioactive Waste  High Energy Laser Matter Physics R&D  natter interaction physics research and development gh power lasers in laser-matter interaction physics,

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	:	.1		Joniania			
Country:	Gabon						
2/4/1982	12/31/1986	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Solar Energy
Title:			tanding between the on of Solar Photovo			draulic Resources of the Republic of Gabon ar	nd the United States Department of Energy for a Joint
Comment:	: Program to d	emonstrate te	echnical, and social va	alue of pho	tovoltaic power sys	stems in rural ears of Gabon. Extended on year.	Cost of \$ 1.6 M (\$ .5 M to DOE).
ountry:	Germany						
4/24/1987	4/30/1992	Expired	Primary DOE	True		Nuclear Energy	Remote Systems Technology
Title	: Agreement l Systems	between the	•	tment of l	nergy and the Fe	<del>_,</del>	f the Federal Republic of Germany in the field of Remot
Comment	:						
2/20/1998	2/20/2003	In Force	Primary DOE	True		Energy Research and Development	Energy Research
Title:	: Agreement I Republic of	Between the Germany on	Department of Ener Cooperation in Ene	gy of the r gy Resea	Inited States of A rch, Science and	merica and the Federal Ministry of Education, Technology, and Development	Science, Research and Technology of the Federal
Comment	: Auto renewa	for 5 year pe	riods. Broad-based u	ımbrella a	reement to allow for	ormal cooperation in various program areas	
11/2/1981	12/31/1987	Expired	Primary DOE	False		Information and/or Personnel Exchange	Energy-Related Information
Title:	: Memorandu Mathematic:	m of Undersi s of the Fede	tanding between the ral Republic of Gerr	Departm nany	ent of Energy of th	he United States of America and the Technical	Information Center for Energy, Physics, and
Comment:	:						
8/2/1965	12/31/1968	Expired	Primary DOE	False		Nuclear Energy	Gas Cooled Reactors
Title:	: Memorandu	m of Underst	tanding Regarding (	Cooperatio	n Pertaining to th	ne AVR Reactor	
Comment	: Exchange of	information in	the field of pebble-b	ed high-ter	nperature, gas-coo	led reactors. Includes participation by Euratom	
6/8/1976	9/30/1991	Expired	Primary DOE	True		Nuclear Energy	Fast Breeder Reactors
				of Davida			
Title	of Liquid Me	between the letal-Cooled F	Energy Research an ast Breeder Reactor	rs Peveloj	oment Administra	tion and the Federal Minister for Research and	Technology of Federal Republic of Germany in the Fie
Title:	of Liquid Me	etal-Cooled F	ast Breeder Reactor	rs	oment Administra		
Title: Comment: 2/11/1977	of Liquid Me : 2/11/1987	Expired	Primary DOE	True		Nuclear Energy	Gas Cooled Reactors
Title: Comment: 2/11/1977 Title:	of Liquid Me  2/11/1987  Agreement of Gas	Expired between U.S.	Primary DOE  Energy Research a	True nd Develo	pment Administra y	Nuclear Energy ation and the Federal Ministry for Research an	Gas Cooled Reactors d Technology of the Federal Republic of Germany in th
Title: Comment: 2/11/1977 Title: Comment:	of Liquid Me  2/11/1987  Agreement of Gas	Expired between U.SCooled Readexchanges co	Primary DOE  Energy Research a ctor Concepts and 1 vering fuel, fission pro	True  nd Develo Fechnolog  oduct beha	pment Administra y	Nuclear Energy ation and the Federal Ministry for Research an pt. 30, 1977 to include French Atomic Energy Cor	Gas Cooled Reactors  d Technology of the Federal Republic of Germany in th  mmission and Sciess Science and Research Offices
Title:  Comment: 2/11/1977 Title:  Comment: 9/27/1977	of Liquid Me : 2/11/1987 : Agreement a Field of Gas : Technology of	Expired between U.SCooled Readexchanges cooled In Force	Primary DOE  Energy Research a ctor Concepts and ivering fuel, fission propries.	True  nd Develo fechnolog oduct beha	opment Administra y vior. Amended Se	Nuclear Energy ation and the Federal Ministry for Research an pt. 30, 1977 to include French Atomic Energy Cor Arms Control and Nonproliferation	Gas Cooled Reactors d Technology of the Federal Republic of Germany in the mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security
Title:  Comment: 2/11/1977 Title:  Comment: 9/27/1977 Title:	of Liquid Me  2/11/1987  Agreement I Field of Gas Technology e  Agreement I Safeguards	Expired between U.SCooled Readexchanges cooled Readexchanges cooled Readexchanges cooled Readexchanges cooled Readexchanges the land Physical	Primary DOE  Energy Research a ctor Concepts and ivering fuel, fission propries.	True  nd Develo Fechnolog oduct beha  True tment of I	pment Administra y vior. Amended Se Energy and the Fe	Nuclear Energy ation and the Federal Ministry for Research an pt. 30, 1977 to include French Atomic Energy Cor Arms Control and Nonproliferation	Gas Cooled Reactors  d Technology of the Federal Republic of Germany in the  mmission and Sciess Science and Research Offices
Comment: 2/11/1977 Title: Comment: 9/27/1977 Title: Comment:	of Liquid Me  : 2/11/1987 : Agreement I Field of Gas : Technology e : Agreement I Safeguards : Open-end ex	Expired between U.SCooled Read exchanges cooled Read piration date	Primary DOE  Energy Research a ctor Concepts and i vering fuel, fission pre Primary DOE United States Depar	True  nd Develo Fechnolog oduct beha  True timent of l and Deve	pment Administra y vior. Amended Se Energy and the Fe	Nuclear Energy  ation and the Federal Ministry for Research an  pt. 30, 1977 to include French Atomic Energy Cor  Arms Control and Nonproliferation  ederal Minister for Research and Technology of	Gas Cooled Reactors d Technology of the Federal Republic of Germany in th mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security of Germany Cooperate in the field of Nuclear Material
Title:  Comment: 2/11/1977     Title: Comment: 9/27/1977     Title: Comment: 11/20/1987	of Liquid Me : 2/11/1987 : Agreement the Field of Gas : Technology e : Agreement safeguards : Open-end ex 11/20/1992	Expired between U.SCooled Read exchanges cooled In Force between the and Physical piration date Expired	Primary DOE  Energy Research a ctor Concepts and invering fuel, fission propriet of the primary DOE  United States Depart I Security Research  Primary DOE	True  Ind Develor Fechnolog Oduct beha  True Itment of land Deve	opment Administra y vior. Amended Se Energy and the Fe lopment	Nuclear Energy ation and the Federal Ministry for Research an pt. 30, 1977 to include French Atomic Energy Cor Arms Control and Nonproliferation ederal Minister for Research and Technology of	Gas Cooled Reactors d Technology of the Federal Republic of Germany in the mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security of Germany Cooperate in the field of Nuclear Material  Exchange of Information
Comment: 2/11/1977 Title: Comment: 9/27/1977 Title: Comment: 11/20/1987 Title:	of Liquid Me  : 2/11/1987 : Agreement If Field of Gas : Technology e  : Agreement safeguards : Open-end ex 11/20/1992 : Memorandu Information	Expired between U.SCooled Read exchanges coolen Force In Force between the and Physical piration date Expired m of Undersit	Primary DOE  Energy Research a ctor Concepts and invering fuel, fission propriet of the concepts and invering fuel, fission propriet of the concepts and invering fuel, fission propriet of the concepts and inverse of the concepts of th	True  nd Develo Fechnolog oduct beha  True timent of l and Deve	opment Administra y vior. Amended Se Energy and the Fe lopment	Nuclear Energy ation and the Federal Ministry for Research an pt. 30, 1977 to include French Atomic Energy Cor Arms Control and Nonproliferation ederal Minister for Research and Technology of	Gas Cooled Reactors d Technology of the Federal Republic of Germany in the mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security of Germany Cooperate in the field of Nuclear Material
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Comment: 2/11/1977 Title: Comment: 9/27/1977 Title: Comment: 11/20/1987 Title: Comment: 10/5/1979	of Liquid Me  2/11/1987  Agreement of Field of Gas  Technology of  Agreement of Safeguards  Open-end ex  11/20/1992  Memorandu Information  INFORMATION  8/14/1981	Expired between U.S. Cooled Readexchanges coolen The coolen the coolen date Expired m of Undersion EXCHANG	Primary DOE  Energy Research a ctor Concepts and I vering fuel, fission propriet of the content of the ctor Concepts and I vering fuel, fission propriet of the ctor Concepts and I vering fuel, fission propriet of the ctor Concepts I verified States Depart Security Research  Primary DOE tanding between the CEE  Primary DOE	True  nd Develo Fechnolog oduct beha  True timent of I and Deve  False o U.S. Dep	opment Administra y vior. Amended Se Energy and the Fe lopment artment of Energy	Nuclear Energy ation and the Federal Ministry for Research an opt. 30, 1977 to include French Atomic Energy Corner Arms Control and Nonproliferation ederal Minister for Research and Technology of Information and/or Personnel Exchange of and Federal Ministry for Research and Technology for Research and Technology of Information and/or Personnel Exchange of and Federal Ministry for Research and Technology in the Information and	Gas Cooled Reactors d Technology of the Federal Republic of Germany in the mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security of Germany Cooperate in the field of Nuclear Material  Exchange of Information ology of Germany for an Exchange of Energy-Related  Coal Liquefaction/SRC-II
Comment: 2/11/1977 Title: Comment: 9/27/1977 Title: Comment: 11/20/1987 Title: Comment: 10/5/1979 Title:	of Liquid Me  2/11/1987  Agreement of Field of Gas  Technology of Safeguards  Open-end ex  11/20/1992  Memorandu Information  INFORMATION  8/14/1981  Agreement of Cooperation	Expired between U.SCooled Readexchanges cooled Readexchanges cooled Readexchand Physical piration date Expired m of Undersity ON EXCHANG Terminated between the pron Coal Liquid	Primary DOE  Energy Research a ctor Concepts and I vering fuel, fission propriet of the content of the ctor Concepts and I vering fuel, fission propriet of the ctor Concepts and I vering fuel, fission propriet of the ctor Concepts I verified States Depart Security Research  Primary DOE tanding between the CEE  Primary DOE	True  Ind Develor Fechnolog Oduct beha  True Itment of I and Deve  False I U.S. Dep	ppment Administra y vior. Amended Se Energy and the Fe lopment artment of Energy United States of Alocess	Nuclear Energy ation and the Federal Ministry for Research an opt. 30, 1977 to include French Atomic Energy Corner Arms Control and Nonproliferation ederal Minister for Research and Technology of Information and/or Personnel Exchange of and Federal Ministry for Research and Technology for Research and Technology of Information and/or Personnel Exchange of and Federal Ministry for Research and Technology in the Information and	Gas Cooled Reactors d Technology of the Federal Republic of Germany in the mmission and Sciess Science and Research Offices Nuclear Materials Safeguards/Physical Security of Germany Cooperate in the field of Nuclear Material  Exchange of Information ology of Germany for an Exchange of Energy-Related

tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Agreement L Conversion			Research	and Technology	of the Federal Republic of Germany and the U	nited States Department of Energy on a Project for the
Comment:	Signed in Bor	nn, Germany					
10/1/1981	10/1/1991	Expired	Secondary DOE	Faise	Primary DOE	Civilian Radioactive Waste Management	Radioactive Waste Isolation
Title:			en the Department of Experiments at			ites of America and the Federal Minister for Re	search and Technology of the Federal Republic of
Comment:							
1/28/1984	11/28/1990	Expired	Secondary DOE	True	Primary DOE	Environmental Restoration and Waste Management	High-level Radioactive Waste
			en the Department Treatment for Immo				search and Technology of the Federal Republic of
Comment:							
2/28/1991	6/30/1995	Expired	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Safeguards Techniques for Mixed UPu Oxide Fuel (MOX-II)
Title:	Project Agre Techniques	ement betwe and instrum	en the United State entation for Siemen	s Departr s Mixed U	nent of Energy an Iranium-Plutoniun	d the Federal Ministry for Research and Techr n Oxide Fuel Fabrication Facility (MOX_II)	ology in the area of Nondestructive Assay Safeguards
Comment:							
/29/1992	7/29/1994	Expired	Tertiary DOE	True	Secondary DOE	Arms Control and Nonproliferation	NDA for Siemens Mixed UPu Oxide Fuel (MOX-II)
Title:	Annex to Pro Assay Safeg	oject Agreem wards Techn	ent between the Un iques and Instrume	ited State entation fo	es Department of l or Siemens Mixed	Energy and the German Federal Minister for Ro Uranium-Plutonium Fuel Fabrication Facility (	esearch and Technology in the area of Nondestructive MOXII)
Comment:	covers projec	t involving Lo	s Alamos National La	ab and Sie	mens Facility		
0/26/1978	7/31/1980	Expired	Intergovernmental	False		Fossil Energy	Coal Liquefaction/SRC-II
Title:	Protocol bet	ween the Go	vernment of the Un	ited State	s of America and	the Federal Minister for Research and Technol	logy of the Federal Republic of Germany
Comment:	Affirmed the	mutually bene	ficial cooperation on	coal lique	faction project and	welcomed the participation of the government of .	lapan
//24/2001	7/24/2006	In Force	Primary DOE	True		Science and Technology	Agreement between DOE and Germany on Dense Plasma Physics
Title:	Implementin America on	g Agreemen Collaboratio	t between the Feder n in the Field of Den	ral Ministr ise Plasm	y of Education an a Physics	d Research of the Federal Republic of German	y and the Department of Energy of the United States o
Comment:							
5/12/1998	5/12/2001	In Force	Secondary DOE	True	Primary DOE	Environmental Restoration and Waste Management	Project: Transportation of Rad Waste
Title:	Project Agre Germany: 1	ement betwe echnical Exc	een the Department change and Coopera	of Energy ation on T	y of the United Sta ransportation Red	ates of America and the Federal Institute for Ma quirements in the Field of Management of Rad	aterial Research and Testing of the Federal Republic o loactive Waste
Comment:			4t-				
1/23/1994	11/23/1999	Expired	Primary DOE	False		Information and/or Personnel Exchange	Energy-Related Information
Title:			tanding between the an Exchange of En			the United States of America and the Federal N	linistry for Research and Technology of the Federal
Comment:					<u> </u>		
11/1/2002	11/1/2007	In Force	Primary DOE	True			MOU bet. DESY AND SLAC
Title:	Memorandu Research Ei	m of Undersi fort to Enabl	tanding between the e the Exploitation a	e Deutsch nd Expan	es Elektronen-Syl sion of the Scient	nchrotron DESY and the Stanford Linear Acce lific Capabilities of the Linac Coherent Light So	lerator Center (SLAC) Establishing a Collaborative ource and the TESLA X-Ray Free-electron Laser
Comment:							

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:				gement th		as retrievable surface storage facilities; waste ma posal of low and intermediate level wastes and tra	nagement research and development; waste from ansportation of radioactive waste.
Country:	Ghana						
9/29/1995		In Force	Statement of Intent	False		Energy Efficiency and Renewable Energy	Energy Efficiency and Renewable Energy
Title:		f Intent betwe nd Renewable		of Energy	of the United Sta	ates and the Ministry of Mines and Energy of t	he Republic of Ghana to Cooperate in the Fields of Energ
Comment:	Exchanging (	experience and	d views on opportunit	ies for the	utilization of energ	y efficiency and renewable energy technologies.	
10/30/1995		In Force	Primary DOE	False		Nuclear Energy	Peaceful Uses of Nuclear Energy
Title:	Memorandu Energy Con	m of Understandission and	anding for the Exch Argonne National L	ange of T aboratory	echnical Informat '	tion and for Cooperation in the Field of Peacef	ul Uses of Nuclear Energy between the Ghana Atomic
Comment:			operative institutional IE NATIONAL LAB)	relations	nip for the exchang	e of S&T information regarding the peaceful uses	of atomic energy. This is between Ghana Atomic Energy
10/1/1996	10/1/2001	In Force	Primary DOE	True		Energy Research and Development	Energy Policy, S&T and Development
Title:	Memorandu Cooperation	m of Understa in Energy Po	anding between the plicy, Science and T	Departmechnolog	ent of Energy of t y, and, Developm	he United States of America and the Ministry o ent	of Mines and Energy of the Republic of Ghana on
Comment:	technologies	; environmenta	perative activities in s al management, inclu mpacts; independent	ding utiliza	ation of energy tech	nnologies, particularly cost-effective technologies	g natural gas, liquefied petroleum gas, and clean coal aimed at reducing emissions of greenhouse gases and
2/27/1997	2/27/2001	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Industrial Assessment Center
Title:	Implementir Information,	ng Arrangeme Technical As	ent Between the Dep ssistance and Collab	artment o poration f	of Energy of the U for the Establishm	Inited States of America and the Ministry of Mi ent of the Industrial Assessment Center at the	nes and Energy of the Republic of Ghana: Exchange of e University of Science and Technology in Kumasi, Ghan
Comment:							
			-				
Country:	Hungary						
	Hungary	Completed	Statement of Intent	False		Energy Research and Development	Technical and Administrative Assistance
Country:   6/2/1992 Title:	Terms of rea	ference betwe	een USDOE and the	Hungaria	-	stry and Trade on technical and administrativ	e assistance
Country:   6/2/1992 Title:	Terms of rea	ference betwe g and developingy policy decis	een USDOE and the ng a regulatory frame sions; evaluate need f	<i>Hungaria</i> work for e or and rol	nergy-related func e of energy regulat	stry and Trade on technical and administrative	
Country:   6/2/1992 Title: Comment:	Terms of rei Reorganizing support ener regulatory re	ference betwe g and developingy policy decis	een USDOE and the ng a regulatory frame sions; evaluate need f	<i>Hungaria</i> work for e or and rol	nergy-related func e of energy regulat	stry and Trade on technical and administrativitions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; com	e assistance areas of review need for energy information system to
Country:   6/2/1992 Title:	Terms of rei Reorganizing support ener regulatory re	ference betwe g and developingy policy decis	een USDOE and the ng a regulatory frame sions; evaluate need f	<i>Hungaria</i> work for e or and rol	nergy-related func e of energy regulat	stry and Trade on technical and administrativitions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; com	e assistance areas of review need for energy information system to
Country:   6/2/1992	Terms of rea Reorganizing support ener regulatory re Iceland	ference between and developing policy decisions; assist in Expired	een USDOE and the g a regulatory frame sions; evaluate need f identifying ways to re Primary DOE	Hungaria work for e or and rol egulate lov False	nergy-related func e of energy regulat v-level radioactive	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal
6/2/1992 Title: Comment: Country: 11/23/1973 Title:	Terms of rei Reorganizing support ener regulatory re Iceland Arrangemer Sources	g and developing policy decisions; assist in Expired at between the	een USDOE and the g a regulatory frame sions; evaluate need f identifying ways to re Primary DOE e U.S. Atomic Energ	Hungaria work for e or and rol egulate low False y Commi	nergy-related funce of energy regulat velevel radioactive ssion and the Icel	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal
Country: 6/2/1992 Title: Comment: Country: 11/23/1973 Title: Comment:	Terms of rei Reorganizing support ener regulatory re Iceland Arrangement Sources Exchange of	g and developing policy decisions; assist in Expired at between the	een USDOE and the g a regulatory frame sions; evaluate need f identifying ways to re Primary DOE e U.S. Atomic Energ	Hungaria work for e or and rol egulate low False y Commi	nergy-related funce of energy regulat velevel radioactive ssion and the Icel	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; comp waste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal
Country:   6/2/1992 Title: Comment:  Country:   11/23/1973 Title: Comment: Country:	Terms of rei Reorganizing support ener regulatory re Iceland Arrangemer Sources Exchange of	ference between and developing policy decisions; assist in Expired at between the Information, te	een USDOE and the ng a regulatory frame sions; evaluate need f identifying ways to re Primary DOE e U.S. Atomic Energ	Hungaria work for e for and rol egulate lov  False y Commi	nergy-related funce of energy regulat velevel radioactive ssion and the Icel	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange m geothermal sources	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma
Country: 6/2/1992 Title: Comment:  Country: 11/23/1973 Title: Comment: Country: 7/13/1994	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999	ference between and developing policy decisions gime; assist in Expired at between the Information, to Expired	een USDOE and the ng a regulatory frame sions; evaluate need fidentifying ways to re  Primary DOE e U.S. Atomic Energiechnical specialists of	Hungaria work for e or and rol egulate lov  False y Commit the utiliz  False	nergy-related funce of energy regulat velevel radioactive ssion and the Icel ation of energy from	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange im geothermal sources  Bilateral Energy Consultations	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations
Country: 6/2/1992 Title: Comment: Country: 11/23/1973 Title: Comment: Country: 7/13/1994 Title:	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999	ference between and developing policy decisions gime; assist in Expired at between the Information, to Expired	een USDOE and the ng a regulatory frame sions; evaluate need fidentifying ways to re  Primary DOE e U.S. Atomic Energiechnical specialists of	Hungaria work for e or and rol egulate lov  False y Commit the utiliz  False	nergy-related funce of energy regulat velevel radioactive ssion and the Icel ation of energy from	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange m geothermal sources	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations
Country: 6/2/1992 Title: Comment: Country: 11/23/1973 Title: Comment: Country: 7/13/1994	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999	ference between and developing policy decisions gime; assist in Expired at between the Information, to Expired	een USDOE and the ong a regulatory frame sions; evaluate need fidentifying ways to reserve the control of the c	Hungaria work for e or and rol egulate lov  False y Commi the utiliz  False Governm	nergy-related funce of energy regulat velevel radioactive ssion and the Icel ation of energy from	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange and geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)
Country: 6/2/1992 Title: Comment: Country: 11/23/1973 Title: Comment: Country: 7/13/1994 Title: Comment: 7/13/1994	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999 Memorandu	g and developing policy decisions; assist in Expired at between the Information, to Expired m of Understa	een USDOE and the one a regulatory frame sions; evaluate need fidentifying ways to reserve the control of the c	Hungaria work for e or and rol egulate lov  False y Commi the utiliz  False Governm	nergy-related funce of energy regulat v-level radioactive ssion and the Icel ation of energy from the tof the United	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; comp waste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange m geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and Energy Efficiency and Renewable Energy	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)  SOI in Rnewable Energy
Country:   6/2/1992 Title: Comment:  Country:   11/23/1973 Title: Comment: 7/13/1994 Title: 7/13/1994 Title:	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999 Memorandu	g and developing policy decisions; assist in Expired at between the Information, to Expired m of Understand Pending ment of Intent	een USDOE and the ng a regulatory frame sions; evaluate need fidentifying ways to re  Primary DOE e U.S. Atomic Energy echnical specialists or Statement of Intent anding between the Depart	Hungaria work for e or and rol egulate lov  False y Commi the utiliz  False Governm  False ment of E	nergy-related funce of energy regulat v-level radioactive ssion and the Icel ation of energy from the tof the United finerg of the Uited	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; comp waste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange m geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and Energy Efficiency and Renewable Energy States of America and the Ministry of Non-Co	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)  SOI in Rnewable Energy Inventional Energy Sources of the Republic of India
Country:   6/2/1992 Title: Comment:  Country:   11/23/1973 Title: Comment: 7/13/1994 Title: 7/13/1994 Title:	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999 Memorandu	g and developing policy decisions; assist in Expired at between the Information, to Expired m of Understand Pending ment of Intent	een USDOE and the ng a regulatory frame sions; evaluate need fidentifying ways to re  Primary DOE e U.S. Atomic Energy echnical specialists or Statement of Intent anding between the Depart	Hungaria work for e or and rol egulate lov  False y Commi  the utiliz  False Governm  False ment of E into an Im	nergy-related funce of energy regulat v-level radioactive ssion and the Icel ation of energy from the tof the United finerg of the Uited	istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; comp waste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange m geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and Energy Efficiency and Renewable Energy States of America and the Ministry of Non-Co	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)  SOI in Rnewable Energy
Country:   6/2/1992         Title: Comment:  Country:   11/23/1973         Title: Comment: Country:   7/13/1994         Title: Comment: 7/13/1994         Title: Comment: 7/13/1994	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999 Memorandu SOI recogniz	g and developing policy decisions policy	en USDOE and the ong a regulatory frame sions; evaluate need fidentifying ways to reserve the control of the Parties to enter Statement of Intent to the Parties to enter Statement of Intent	Hungaria work for e or and rol egulate lov  False y Commi  the utiliz  False Governm  False ment of E into an Im False y of Envi	nergy-related funce of energy regulat velevel radioactive ssion and the Icel ation of energy from the firm of the United Energ of the Uited plementing Arrangementing Arrangement of the United plementing Arrangement of the Uited plement of the	Istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange in geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and Energy Efficiency and Renewable Energy  States of America and the Ministry of Non-Companies in the area of renewable energy when the Energy and Environment	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geotherma.  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)  SOI in Rnewable Energy Inventional Energy Sources of the Republic of India US/India Gov't to Gov't S&T Agreement is finalized
Country:   6/2/1992         Title: Comment:  Country:   11/23/1973         Title: Comment: Country:   7/13/1994         Title: Comment: 7/13/1994         Title: Comment: 7/13/1994         Title: Comment: 7/13/1994         Title: Comment: 7/13/1994         Title:	Terms of rei Reorganizing support ener regulatory re Iceland  Arrangemer Sources Exchange of India 7/13/1999 Memorandu  Joint Staten in Environm	g and developing policy decisions; assist in Expired at between the Information, to Expired m of Understand Pending ment of Intent tes the intent of Intent tent Enhancing	pen USDOE and the mg a regulatory frame ions; evaluate need fidentifying ways to reserve the U.S. Atomic Energy echnical specialists or a Statement of Intentifying between the Depart of the Parties to enter Statement of Intentify Energy Technology	Hungaria work for e or and rol egulate lov  False y Commi  the utiliz  False Governm  False ment of E into an Im False y of Envi	nergy-related funce of energy regulativelevel radioactive sision and the Icelation of energy from the form of the United finerg of the Uited plementing Arrangeronment and Forest	Istry and Trade on technical and administrative tions under purview of Min of Industry & Trade in tory body with respect to govt. pricing policy; compaste disposal methods.  Energy Efficiency and Renewable Energy landic National Energy Authority to Exchange in geothermal sources  Bilateral Energy Consultations  States of America (Department of Energy) and Energy Efficiency and Renewable Energy  States of America and the Ministry of Non-Companies in the area of renewable energy when the Energy and Environment	e assistance areas of: review need for energy information system to pare functions of energy regulatory agency to public utility  Geothermal Information on the Utilization of Energy from Geothermal  MOU for Bilateral Energy Consultations of The Government of India (Ministry of Power)  SOI in Rnewable Energy Inventional Energy Sources of the Republic of India US/India Gov't to Gov't S&T Agreement is finalized  SOI in Environment Enhancing Energy Technologies Int of Energy of the United States of America to Coopera

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Memorandu	m of Underst	anding between the		ates Department	of Energy and the Indian Oil and Natural Gas	Commission for Cooperation in Enhanced Oil Recovery
Ca	•	round Coal G	asification				•
Comment:			5: DOE				<del></del>
9/13/2000	9/13/2005	In Force	Primary DOE	False		Energy Efficiency and Renewable Energy	MOU between DOE and India concerning Energy Consultations
Title:	Memorandu Consultatio	m of Underst ns	anding between the	Ministry o	of Power of the R	Republic of India and the Department of Energy	of the United States of America Concerning Energy
Comment:		<del></del>					
9/12/2003	9/12/2008	In Force	Primary DOE	True		Fossil Energy	India - Energy Consultations and Information Exchan
	Consultation	m of Underst ns and Inform	anding between the nation Exchange.	Ministry o	of Coal of the Rep	oublic of India and the Department of Energy o	f the United States of America Concerning Energy
Comment:							
2/9/2006	2/9/2011	In Force	Primary DOE	True			Hydrocarbon Sector Arrangement bet. DOE and India
	intormation	it Between th Relating to th	e Department of En he Hydrocarbon Sed	ergy of the ctor	United States o	f America and the Ministry of Petroleum and N	atural Gas of the Republic of India for the Exchange of
Comment:			·				
ountry:	Indonesia						
11/9/2004	11/9/2009	In Force	Primary DOE	True			Nuclear Material Security and Safeguards Technologies
	Material Sec	nt between the curity and Saf	e Department of En feguards Technolog	ergy of the ies	United States of	f America and the Nuclear Regulatory Agency (	of the Republic of Indonesia for Cooperation in Nuclear
Comment:	Material Sec	t between the	e Department of End eguards Technolog	ergy of the ies	United States of	f America and the Nuclear Regulatory Agency o	-
Comment:	raq	urity and Saf	eguards Technolog	ies 	United States of		of the Republic of Indonesia for Cooperation in Nuclear
Comment: Country: I	raq 12/20/2009	In Force	eguards Technolog	True		Science and Technology	of the Republic of Indonesia for Cooperation in Nuclear  MOU bet. DOE and Republic of Iraq
Comment:	raq 12/20/2009 Memorandu	In Force	eguards Technolog	True	nt of Energy of t	Science and Technology the United States of America and Ministry of Oi	of the Republic of Indonesia for Cooperation in Nuclear
Comment: country: I 2/20/2004 Title:	raq 12/20/2009 Memorandu	In Force	eguards Technolog Primary DOE anding between the	True	nt of Energy of t	Science and Technology the United States of America and Ministry of Oi	of the Republic of Indonesia for Cooperation in Nuclear  MOU bet. DOE and Republic of Iraq
Comment: 2/20/2004 Title: Comment:	raq 12/20/2009 Memorandu Analysis, So	In Force	eguards Technolog Primary DOE anding between the	True	nt of Energy of t	Science and Technology the United States of America and Ministry of Oi	of the Republic of Indonesia for Cooperation in Nuclear  MOU bet. DOE and Republic of Iraq
Comment: 2/20/2004 Title: Comment:	raq 12/20/2009 Memorandu Analysis, So	In Force	Primary DOE anding between the	True Departme	nt of Energy of t	Science and Technology the United States of America and Ministry of Oi tion	of the Republic of Indonesia for Cooperation in Nuclear  MOU bet. DOE and Republic of Iraq  if of the Republic of Iraq for Cooperation on Energy
Comment:  ountry: I 2/20/2004 Title: Comment: ountry: I 8/1/1980	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983	In Force m of Underst	Primary DOE anding between the chnology, and Ener	True Departme	nt of Energy of t logy Demonstra	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy	MOU bet. DOE and Republic of Iraq  I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control
Comment: 2/20/2004 Title: Comment: ountry: I 8/1/1980 Title:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement	In Force m of Underst	Primary DOE anding between the chnology, and Ener	True Departme	nt of Energy of t logy Demonstra	Science and Technology the United States of America and Ministry of Oi tion	MOU bet. DOE and Republic of Iraq  I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control
Comment:  2/20/2004 Title:  Comment:  ountry: I 8/1/1980 Title: Comment:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement	In Force m of Underst	Primary DOE anding between the chnology, and Ener Primary DOE Department of Energ	True Departme	nt of Energy of t logy Demonstra	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl	MOU bet. DOE and Republic of Iraq I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities
Comment:  2/20/2004 Title:  Comment: ountry: I 8/1/1980 Title: Comment: 8/1/1980	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I	In Force m of Understience and Te  Expired petween the L	Primary DOE anding between the chnology, and Ener Primary DOE Department of Energy	True Departme gy Techno False gy of the U	nt of Energy of t logy Demonstra nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy	MOU bet. DOE and Republic of Iraq If of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration
Comment:  2/20/2004 Title:  Comment: 0untry: I 8/1/1980 Title: Comment: 8/1/1980 Title:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I	In Force m of Understience and Te  Expired petween the L	Primary DOE anding between the chnology, and Ener Primary DOE Department of Energy	True Departme gy Techno False gy of the U	nt of Energy of t logy Demonstra nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl	MOU bet. DOE and Republic of Iraq If of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration
Comment:  2/20/2004 Title:  Comment: 0untry: I 8/1/1980 Title: Comment: 8/1/1980 Title: Comment:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I	In Force m of Understience and Te  Expired petween the L	Primary DOE anding between the chnology, and Ener Primary DOE Department of Energy	True Departme gy Techno False gy of the U	nt of Energy of t logy Demonstra nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl	MOU bet. DOE and Republic of Iraq I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration rael in Anaerobic Digestion Demonstrations
Comment:  2/20/2004 Title:  Comment: 0untry: I 8/1/1980 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I 12/31/1983	In Force m of Underst. ience and Te  Expired between the L  Expired between the L  Expired	Primary DOE anding between the chnology, and Ener Primary DOE Department of Energy Primary DOE Department of Energy	True Departme gy Techno  False gy of the U  False gy of the U	nt of Energy of t logy Demonstra nited States and nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy	MOU bet. DOE and Republic of Iraq I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration rael in Anaerobic Digestion Demonstrations  Luminescent Planer Solar Collectors
Comment:  2/20/2004 Title:  Comment: 8/1/1980 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980 Title:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I 12/31/1983	In Force m of Underst. ience and Te  Expired petween the L  Expired petween the L  Expired	Primary DOE anding between the chnology, and Energy Primary DOE Department of Energy Primary DOE Department of Energy Primary DOE Department of Energy	True Departme gy Techno  False gy of the U  False gy of the U	nt of Energy of t logy Demonstra nited States and nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl	MOU bet. DOE and Republic of Iraq I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration rael in Anaerobic Digestion Demonstrations  Luminescent Planer Solar Collectors
Comment: 2/20/2004 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980 Title: Comment:	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I 12/31/1983 Agreement I	In Force m of Underst. ience and Te  Expired petween the L  Expired petween the L  Expired	Primary DOE anding between the chnology, and Energy Primary DOE Department of Energy Primary DOE Department of Energy Primary DOE Department of Energy	True Departme gy Techno  False gy of the U  False gy of the U	nt of Energy of t logy Demonstra nited States and nited States and	Science and Technology the United States of America and Ministry of Oil tion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy	MOU bet. DOE and Republic of Iraq If of the Republic of Iraq of the Republic of Iraq Solar Passive Climate Control rael in Passive Climate Control Test Facilities Solar Anaerobic Digestion Demonstration rael in Anaerobic Digestion Demonstrations Luminescent Planer Solar Collectors rael in Luminescent Planar Solar Collectors
Comment: 2/20/2004 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980 Title: Comment: 8/1/1980 Title: Comment: 6/3/1984	raq 12/20/2009 Memorandu Analysis, So srael 12/31/1983 Agreement I 12/31/1983 Agreement I Description n 3/31/1991	In Force m of Underst. ience and Te  Expired petween the L  Expired petween the L  ot available in  Expired	Primary DOE anding between the chnology, and Energy Primary DOE Department of Energy Primary DOE Department of Energy Primary DOE Department of Energy History Primary DOE	True Departme Talse Ty of the U False	nt of Energy of to logy Demonstra nited States and nited States and	Science and Technology the United States of America and Ministry of Oittion  Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Efficiency and Renewable Energy the Ministry of Energy and Infrastructure of Isl Energy Research and Development	MOU bet. DOE and Republic of Iraq I of the Republic of Iraq for Cooperation on Energy  Solar Passive Climate Control rael in Passive Climate Control Test Facilities  Solar Anaerobic Digestion Demonstration rael in Anaerobic Digestion Demonstrations  Luminescent Planer Solar Collectors

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Established a Center of Scient	reasonably bentific and Te	palanced exchange of chnological Information	energy in	formation. Coordin	nators for DOE and MOEI, respectively, were the C	Office of Scientific and Technical Information and the Nation
5/27/1987	5/31/1992	Expired	Primary DOE	False		Energy Research and Development	Basic Energy Sciences
Title:	Agreement b	etween the L	Department of Energ	y of the	United States of A	merica and the Israeli Ministry of Science and	Development in Basic Energy Sciences
Comment:	WORKSHOP	ON COMPU	TATIONAL CHEMIST	TRY			
2/1/1996	2/1/2001	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Energy Cooperation
Title:	Agreement b	etween the L	Department of Energ	gy of the	United States of A	merica and the Ministry of Energy and Infrastr	ucture of Israel Concerning Energy Cooperation
Comment:							gy; fossil energy, including oil, gas and coal; electric power underway in clean coal technology and electric vehicles.
7/1/1975		Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Solar Heating and Cooling
Title:	Memorandur	n of Underst	anding Concerning	Cooperat	tive Information E	xchange Relating to the Development of Solar	Heating and Cooling Systems in Buildings
Comment:	<u> </u>						
10/1/1984	12/31/1987	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Oil Shale Organic Sulfur
Title:	Annex V to to Developmen	he Agreemer t Fate of Org	nt between the Depa anic Sulfur in U.S. a	rtment of and Israel	f Energy of the Un i Oil Shales	ited States of America and the Ministry of Ener	rgy and Infrastructure of Israel in Energy Research and
Comment:	Description no	ot available in	History				
10/1/1984	12/31/1987	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 6 - Coal Conversion
Title:						nited States and the Ministry of Energy and Infr w-Pressure Coal Conversion	rastructure of Israel in Energy Research and
Comment:	·						
6/20/1985	12/31/1987	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 7 - Biomass
Title:						Inited States of America and the Ministry of End Production and Conversion Systems	ergy and Infrastructure of Israel in Energy Research and
Comment:							
6/17/1985	12/31/1988	Expired	Secondary DOE	False	•	Energy Efficiency and Renewable Energy	Annex 8 - Solar Cooling
	and Develop					United States of America and the Ministry of E ion Systems for Solar Cooling	nergy and Infrastructure of Israel in Energy Research
Comment:				<del></del>			
11/17/1987	6/30/1990	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 10 - Simulation/Analysis High Temperature Receivers
Title:						Inited States of America and the Ministry of End and thermochemical Processes for Central Rec	ergy and Infrastructure of Israel in Energy Research and eivers
Comment:	<u> </u>						
9/29/1988	9/30/1991	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 12 - Combustion of Pulverized Coal in Counter Current
Title:			ent between the Depustion of Pulverized				lustry and Infrastructure of Israel in Energy Research
Comment:	<u> </u>		· · · · · · · · · · · · · · · · · · ·	_			
11/17/1987	6/30/1990	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 13 - Theoretical/Experimental Eval Metal Hydride Slurry
Title:	Annex XIII to Developmen	the Agreem t Theoretica	ent between the De I and Experimental	oartment	of Energy of the U	Inited States of America and the Ministry of En	ergy and Infrastructure of Israel in Energy Research and
Comment:					<u> </u>		
5/27/1987	5/31/1992	Expired	Secondary DOE	False	Primary DOE	Information and/or Personnel Exchange	Annex 1- Information/Personnel Exchange

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	:						
6/17/1985	12/31/1989	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 1 - Solar Energy
Title:	: Annex 1- to Developmen	the Agreeme t	ent between the Dep	artment d	of Energy of the Un	ited States of America and the Ministry of En	ergy and Infrastructure of Israel in Energy Research and
Comment:	: Status of four	ongoing proje	ects in solar energy w	vill be revi	ewed by the Joint DO	DE/MOEI Coordinating Committee established up	nder the umbrella agreement
6/3/1984	3/31/1991	Expired	Secondary DOE	False	Primary DOE	Information and/or Personnel Exchange	Annex 2 - Information/Personnel Exchange
Title:	: Annex II to ti Developmen	ne Agreemer t Exchange	nt between the Depa of Information and I	rtment of Personne	Energy of the Unit	•	rgy and Infrastructure of Israel in Energy Research and
Comment:	:						
2/22/2000		In Force	Statement of Intent	False		Arms Control and Nonproliferation	SOI on Nonproliferation, Arms Control and Regional Security
	Proliferation	nt between t , Arms Contr	the Department of E rol, and Regional Se	nergy of t curity	the United States of	f America and the Atomic Energy Commissio	n of Israel on cooperation in the Fields of Non-
Comment:	:						
2/22/2000		Pending	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Renewable Energy Implementation Agreement
	Cooperation	in the Field	of Renewable Energ	iy .		·	ational Infrastructure of the State of Israel for
	: Signed on Fe Feb. 22, 2000	)	······································	greement	will enter into force v	when the exchange of diplomatic notes takes pla	ce for the umbrella Agreement also signed with MONI on
2/22/2000		Pending	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Electric and Hybrid Buses Implementation Agreement (2)
Title:	: Implementat Cooperation	ion Agreeme in the Field	ent 2 between the De of Electric and Hybr	partment id Buses	of Energy of the U	nited States of America and the Ministry of N	ational Infrastructure of the State of Israel for
Comment:	: Signed on Fe	b. 22, 2000, v	vill enter into forces a	fter the ex	change of diplomatic	notes for the umbrella Agreement also signed of	on Feb. 22, 2000 with MONI
2/22/2000	2/22/2005	Pending	Primary DOE	True		Energy Research and Development	Energy Cooperation Agreement
Title:	: Agreement b	etween the l	Department of Energ	y of the l	United States of An	nerica and the Ministry of National Infrastruct	ure of the State of Israel Concerning Energy Cooperation
Comment:	: Start Date is	date of signat	ure. Agreement will e	enter into f	orce after notification	n through diplomatic channels.	
10/23/2001	10/23/2006	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Cooperation in the Field of High Temperature Superconductivity
Title:	: Implementat Cooperation	ion Agreeme in the Field	ent 3 between the De of High Temperature	epartment e Superco	of Energy of the Unductivity	nited States of America and the Ministry of N	ational Infrastructure of the State of Israel for
Comment:	•				<u></u>		
10/1/1984	12/31/1987	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Oil Shale Extraction
Title:	: Annex on Oi	l Shale Extra	ction				
Comment:	: Description n	ot available in	History				
9/29/1987	12/31/1990	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 11 - Fluidized Bed Retorting & Combustion of O Shales
Title:	: Annex XI to Developmen	the Agreeme t Fluidized B	nt between the Department Retorting and Co	artment o ombustio	f Energy of the Uni n of Israeli Oil Shale	ted States of America and the Ministry of Ene es	ergy and Infrastructure of Israel in Energy Research and
Comment:	:						
10/1/1984	12/31/1987	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 5 - Oil Shale Blasting
Title:	: Annex V to t Developmen	he Agreemer t Fate of Org	nt between the Depa ganic Sulfur in U.S. a	rtment of and Israel	Energy of the Unit	ed States of America and the Ministry of Ene	rgy and Infrastructure of Israel in Energy Research and
		_					
Comment:	<u>:                                      </u>						
Comment:		· · · · · · · · · · · · · · · · · · ·					

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Protocol of I of the Repul	ntent of Inter blic of Italy	nt between the Depa	rtment of	Energy of the Uni	ted States of America and the Ministry of the U	University and of Scientific and Technological Research
Comment:							
12/5/1985	12/5/1991	Expired	Intergovernmental	True		Energy Research and Development	Energy R&D
Title:	Memorandu: Developmen	m of Underst It Cooperatio	and between the Go n	vernmen	t of the United Stat	tes of America and the Government of the Itali	an Republic Concerning Energy Research and
Comment:							***
10/4/1993	10/4/2003	In Force	Intergovernmental	True		Science and Technology	Gov't to Govt S & T
						d the Government of the Italian Republic for Se	
Comment:	Science and responsibility	Technology a . Renewed la	greement between th ist in 1998.	e United S	States and the Gove	rnment of Italy which allows U.S. Government ag	encies to undertake cooperation in their respective areas o
5/26/1995	5/26/2000	In Force	Primary DOE	True		Energy Research and Development	Energy R&D
Title:	Agreement I Energy Rese	between the learch and De	Department of Energ velopment	y of the l	United States of An	nerica and the Ministry of Industry, Commerce	e and Handicraft of the Italian Republic in the Field of
Comment:	continues 19	85 MOU in En	ergy R&D				
11/17/1965		Expired	Primary DOE	False		Nuclear Energy	Chemical Processing and Fabrication
Title:	Contract for States of An	Chemical Pr nerica and th	ocessing Fabricatio e National Committe	n Service e for Nuc	s between the Unit lear Energy acting	ted States Atomic Energy Commission Acting for and on behalf of the Government of the It.	for and on Behalf of the Government of the United alian Republic
Comment:							
	0/0/4 000						
6/3/1975	6/3/1990	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Geothermal
Title:	Agreement to in the Field of	etween the l	•	y Researc	ch and Developmei Iopment	••	
Title:	Agreement to in the Field o	petween the loof Geotherma	United States Energ	y Researd and Deve	ch and Developmen Iopment	nt Administration (ERDA) and the Italian Ente	Nazionale per L'Energia Elettrica (ENEL) on Cooperation
Title: Comment: 10/17/1979	Agreement bein the Field of	petween the loof Geotherma	United States Energy al Energy Research	y Researd and Deve False	lopment	nt Administration (ERDA) and the Italian Ente	Nazionale per L'Energia Elettrica (ENEL) on Cooperation Energy R&D
Title: <u>Comment:</u> 10/17/1979  Title:	Agreement to in the Field of 12/31/1984 Memorandu	Expired	United States Energy al Energy Research Primary DOE anding between the	y Researd and Deve False Governm	nent of the United S	nt Administration (ERDA) and the Italian Enter Energy Research and Development States and the Government of the Italian Repu	Nazionale per L'Energia Elettrica (ENEL) on Cooperation Energy R&D blic Concerning Energy Cooperation
Title: Comment: 10/17/1979 Title: Comment:	Agreement L in the Field of 12/31/1984 Memorandu Annex I - For	Expired m of Underst	United States Energy If Energy Research Primary DOE Fanding between the ation, Annex II - Join	y Researce and Deve False Governm t Coal Pro	nent of the United S	Energy Research and Development  States and the Government of the Italian Repuly/U.S. Joint Solar Energy Program, Annex IV Italian	Nazionale per L'Energia Elettrica (ENEL) on Cooperatio  Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)
Title:  Comment: 10/17/1979	Agreement & in the Field & 12/31/1984 Memorandu Annex I - For 12/5/1991	Expired m of Cooper Expired Expired	United States Energy al Energy Research Primary DOE anding between the ation, Annex II - Join Primary DOE	False Governm t Coal Pro	nent of the United S gram, Annex III Ital Intergovernmental	Energy Research and Development  States and the Government of the Italian Repuly/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations	Nazionale per L'Energia Elettrica (ENEL) on Cooperation  Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations
Comment: 10/17/1979 Title: Comment: 12/5/1985 Title:	12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation	Expired m of Underst Expired Expired g Agreement	United States Energy al Energy Research Primary DOE anding between the ation, Annex II - Join Primary DOE	False Governm t Coal Pro	nent of the United S gram, Annex III Ital Intergovernmental	Energy Research and Development  States and the Government of the Italian Repuly/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations	Nazionale per L'Energia Elettrica (ENEL) on Cooperation  Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations
Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment:	12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation	Expired m of Underst Expired Expired g Agreement	United States Energy Research Primary DOE anding between the ation, Annex II - Join Primary DOE t between the Depar	False Governm t Coal Pro False timent of l	nent of the United S gram, Annex III Ital Intergovernmental Energy of the Unite	Energy Research and Development  States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations  and States of America and the Ministry of Indus	Nazionale per L'Energia Elettrica (ENEL) on Cooperation  Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986	Agreement & in the Field of 12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988	Expired ms of Cooper Expired g Agreement Expired	Primary DOE atton, Annex II - Join Primary DOE to between the between the Depart	False Governm t Coal Pro False fament of l	nent of the United S gram, Annex III Ital Intergovernmental Energy of the United	Energy Research and Development  States and the Government of the Italian Repury/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy	Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986	Agreement & in the Field & 12/31/1984  Memorandum Annex I - For 12/5/1991  Implementin Consultation  12/31/1988  Implementin	Expired m of Underst ms of Cooper Expired g Agreement s  Expired g Memorand	Primary DOE the description of the primary DOE	False Governm t Coal Pro False trment of i	nent of the United S gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental	Energy Research and Development  States and the Government of the Italian Repury/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy	Nazionale per L'Energia Elettrica (ENEL) on Cooperation Energy R&D blic Concerning Energy Cooperation ly/U.S. Joint UHV Program (Electricity) Energy Policy Consultations try, Commerce, and Handicraft of Italy on Energy Polic
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986	Agreement & in the Field & Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Research	Expired m of Underst ms of Cooper Expired g Agreement s  Expired g Memorand	Primary DOE the description of the primary DOE	False Governm t Coal Pro False trment of i	nent of the United S gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental	Energy Research and Development  States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy  een the Government of the United States and	Energy R&D  blic Concerning Energy Cooperation ly/U.S. Joint UHV Program (Electricity) Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986 Title: Comment: 9/17/1986	Agreement & in the Field & Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Reset 12/31/1988	Expired mof Cooper Expired g Agreement s Expired g Memorand parch and De	United States Energy Research Primary DOE landing between the lation, Annex II - Join Primary DOE t between the Depart Primary DOE um to the Memorana velopment Coopera	False  False  Governm t Coal Pro  False timent of i	gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental Intergovernmental Inderstanding betw. Aboratory Project Intergovernmental	Energy Research and Development  States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy  een the Government of the United States and for Direct Liquefaction of Coal  Information and/or Personnel Exchange	Energy R&D  blic Concerning Energy Cooperation ly/U.S. Joint UHV Program (Electricity) Energy Policy Consultations try, Commerce, and Handicraft of Italy on Energy Policy Coal Liquefaction the Government of the Italian Republic Concerning  Energy-Related Information
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986 Title: Comment: 9/17/1986	Agreement & in the Field & Memorandum Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Research	Expired m of Underst Expired g Agreement s Expired g Memorand parch and De Expired m of Underst	United States Energy Research Primary DOE landing between the lation, Annex II - Join Primary DOE t between the Depart Primary DOE um to the Memorana velopment Coopera	False Governm t Coal Pro False timent of li False dum of Unition in a L False Department	gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental Intergovernmental Inderstanding betw. Aboratory Project Intergovernmental Intergovernmental	Energy Research and Development  States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy  een the Government of the United States and for Direct Liquefaction of Coal  Information and/or Personnel Exchange	Energy R&D  blic Concerning Energy Cooperation ly/U.S. Joint UHV Program (Electricity) Energy Policy Consultations try, Commerce, and Handicraft of Italy on Energy Policy Coal Liquefaction the Government of the Italian Republic Concerning  Energy-Related Information
Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986 Title: Comment: 9/17/1986 Title: Comment:	Agreement II in the Field of 12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Reservation 12/31/1988 Memorandur Concerning	Expired m of Underst Expired g Agreement s Expired g Memorand parch and De Expired m of Underst	United States Energy Research Primary DOE landing between the lation, Annex II - Join Primary DOE to between the Depart Primary DOE lum to the Memorant velopment Coopera Primary DOE landing between the	False Governm t Coal Pro False timent of li False dum of Unition in a L False Department	gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental Intergovernmental Inderstanding betw. Aboratory Project Intergovernmental Intergovernmental	Energy Research and Development  States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital  Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy  een the Government of the United States and for Direct Liquefaction of Coal  Information and/or Personnel Exchange	Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction  the Government of the Italian Republic Concerning
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986 Title: 9/17/1986 Title: Comment: 7/8/1987	Agreement & in the Field of 12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Research 12/31/1988 Memorandur Concerning 12/31/1991	Expired m of Underst ms of Cooper Expired g Agreement s  Expired g Memorand earch and De  Expired m of Underst septired Expired Expired Expired Expired	Primary DOE to the Memorant  Primary DOE	False Governm t Coal Pro False fament of li  False dum of Ution in a L  False Department Information	gram, Annex III Ital Intergovernmental Intergovernmental Intergovernmental Intergovernmental Inderstanding betwaboratory Project Intergovernmental ent of Energy of the	Energy Research and Development  States and the Government of the Italian Reput y/U.S. Joint Solar Energy Program, Annex IV Ital Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy een the Government of the United States and for Direct Liquefaction of Coal  Information and/or Personnel Exchange e United States of America and the Ministry of Fossil Energy	Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction  the Government of the Italian Republic Concerning  Energy-Related Information  f Industry, Commerce, and Crafts of the Republic of Italy  Quantitative Character of Reservoir Heterogeneity
Title:  Comment: 10/17/1979 Title: Comment: 12/5/1985 Title: Comment: 4/11/1986 Title: Comment: 9/17/1986 Title: Comment: 7/8/1987	Agreement & in the Field & Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Research 12/31/1988 Memorandur Concerning 12/31/1991 Implementin	Expired g Agreement s Expired g Memorand earch and De Expired g Memorand earch and De Expired	United States Energy Research Primary DOE landing between the lation, Annex II - Join Primary DOE to between the Depart Primary DOE lum to the Memorant Velopment Coopera Primary DOE landing between the land	False Governm t Coal Pro False timent of li  False dum of Unition in a L  False Department Information	nent of the United S gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental Inderstanding between to be aboratory Project Intergovernmental Ent of Energy of the Unitergovernmental Intergovernmental	Energy Research and Development  States and the Government of the Italian Reput y/U.S. Joint Solar Energy Program, Annex IV Ital Bilateral Energy Consultations and States of America and the Ministry of Indus  Fossil Energy een the Government of the United States and for Direct Liquefaction of Coal  Information and/or Personnel Exchange e United States of America and the Ministry of Fossil Energy	Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction  the Government of the Italian Republic Concerning  Energy-Related Information  f Industry, Commerce, and Crafts of the Republic of Italy  Quantitative Character of Reservoir Heterogeneity  of the Government of the Italian Republic Concerning
Title:  Comment: 10/17/1979     Title: Comment: 12/5/1985     Title: Comment: 4/11/1986     Title: Comment: 9/17/1986     Title: Comment: 7/8/1987	Agreement & in the Field of 12/31/1984 Memorandur Annex I - For 12/5/1991 Implementin Consultation 12/31/1988 Implementin Energy Research 12/31/1988 Memorandur Concerning 12/31/1991 Implementin Energy Research 12/31/1991	Expired g Agreement s Expired g Memorand earch and De Expired g Memorand earch and De Expired	United States Energy Research Primary DOE landing between the lation, Annex II - Join Primary DOE to between the Depart Primary DOE lum to the Memorant Velopment Coopera Primary DOE landing between the land	False Governm t Coal Pro False timent of li  False dum of Unition in a L  False Department Information	nent of the United S gram, Annex III Ital Intergovernmental Energy of the Unite Intergovernmental Inderstanding between to be aboratory Project Intergovernmental Ent of Energy of the Unitergovernmental Intergovernmental	Energy Research and Development States and the Government of the Italian Reputy/U.S. Joint Solar Energy Program, Annex IV Ital Bilateral Energy Consultations and States of America and the Ministry of Indus Fossil Energy een the Government of the United States and for Direct Liquefaction of Coal Information and/or Personnel Exchange e United States of America and the Ministry of Fossil Energy ween the Government of the United States and	Energy R&D  blic Concerning Energy Cooperation  ly/U.S. Joint UHV Program (Electricity)  Energy Policy Consultations  try, Commerce, and Handicraft of Italy on Energy Policy  Coal Liquefaction  the Government of the Italian Republic Concerning  Energy-Related Information  f Industry, Commerce, and Crafts of the Republic of Italy  Quantitative Character of Reservoir Heterogeneity  of the Government of the Italian Republic Concerning

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:					<del></del>		
5/7/1997		In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 3 - Fossil Energy
	Cooperate is	n the Field of	Fossil Energy		0,		r, Commerce and Handicraft of the Republic of Italy t
Comment:	Two addition	al areas were	added in March 1998	3;fuel cells	for power applica	tions and externally fired combined cycle systems	
3/24/1998	3/24/2003	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 4 - Advanced Geothermal Technology
							v, Commerce and handicraft of the Republic of Italy i
			etween Ladrello and		<del></del>		
3/24/1998	3/24/2008	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 5 - Biomass Energy
Title:	Annex V to the Field of	the Agreemer Energy Resea	nt between the Depa arch and Developm	ertment of ent for Co	Energy of the Upperation in the	Inited States of America and the Ministry of Industry Field of Biomass Energy	, Commerce and Handicraft of the Republic of Italy i
Comment:	Information E	xchange on b	iomass systems. Ta	sk sharing	on hot gas clean	-up for medium-scale gasifiers.	
3/24/1998	3/24/2008	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 6 - Photovoltaic Technology
Title:	Annex VI to in the Field	the Agreeme of Energy Re	nt between the Dep search and Develop	artment o ment for	f Energy of the l Cooperation in t	Inited States of America and the Ministry of Industry he Field of Photovoltaic Technology	r, Commerce and Handicraft of the Republic of Italy
Comment:	Info exchang	e on reducing	manufacturing costs	of PV cell	s. Cooperation o	on guidelines for building integrated PV systems.	
5/5/1976	12/31/1981	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Geothermal
Title:	Agreement	Concerning C	Cooperative Informa	tion Exch	ange Relating to	the Development of Geothermal Energy	
Comment:							
6/4/1980	12/31/1983	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3 A - Solar Thermal & Photovoltaic Systems
Title:	Annex III-A	Parallel Sola	r Thermal and Phote	ovoltaic S	ystems		
Comment:		-					<u> </u>
6/4/1980	12/31/1983	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3 C - Solar Central Receiver Technology
Title:	Annex III-C	<b>Utility Applic</b>	ations Study of Sol	ar Centrai	Receiver Techn	ology	
Comment:							
7/10/1998	7/10/2003	In Force	Secondary DOE	True	Primary DOE	Energy Research and Development	Annex 7 - Electric and Hybrid Vehicles
Title:	Annex VII to in the Field	the Agreeme of Energy Res	ent between the Dep search and Develop	eartment of ment for	of Energy of the Cooperation in t	United States of America and the Ministry of Industr he Field of Electric and Hybrid Vehicles	y, Commerce and Handicraft of the Republic of Italy
Comment:	Remains in f	orce for 5 year	rs or until the Agreem	ent expire	s, whichever is so	poner.	
6/4/1980	12/31/1983	Expired	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3 D - Solar Photovoltaic System
Title:	Annex III-D	Small Photov	oltaic System Field	Experime	nt (5 kWe)		
Comment:							
5/17/2005	5/17/2010	In Force	Secondary DOE	True			Annex VIII
Title:		the Agreem Environment		partment	of Energy of the	United States of America and the Ministry of Enviro	nment of the Republic of Italy in the Field of Energy
Comment:							
Country: .	Japan						
5/2/1979	5/1/2005	In Force	Intergovernmental	True		Energy Research and Development	US/Japan Energy and Related Fields Agreement
Title:	Agreement	between the (	Government of the l	Jnited Sta	ites of America a	and the Government of Japan on Cooperation in Res	earch and Development in Energy and Related Field
Comment:	Maintaining a	and intensifying	g cooperation in rese	arch and	development in er	nergy and related fields.	
5/1/1980	10/01/1000		Intergovernmental		Secondary DOE	Science and Technology	Science & Technology

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Preplaced by	the USG-Japa	an agreement on coo		n Research and Dev	elopment in Science and Technology sign	ned on June 20. 1988.
6/20/1988	3/20/1999		Intergovernmental	True		Science and Technology	Research and Development in Science & Technology
Title:	Agreement b	etween the G	Sovernment of the L	Inited Sta	tes of America and	the Government of Japan on Coopera	tion in Research and Development in Science and Technology
	Develop coop	erative activiti	es in scientific and te	chnologic	al R&D in such fields		purposes (NOTE: Original umbrella expired in June 1988. This per
1/24/1983	5/1/2005	In Force	Broad	True	Intergovernmental	Fusion Energy	Fusion Energy
Title:	Exchange of	Notes establ	ishing the Coopera	tion in Fu	sion Research and	Development	
Comment:	DOE and the	Ministry of Ed	ucation, the STA, MC	ONBUSHO	), and the MITI, as e	ent, and special activities as may be muti stablished by an exchange of diplomatic i arch and Development in Energy and Rel	ually agreed, in various technical areas of fusion energy between notes and separate agreements within each organization. Remains lated Fields remains in force.
9/15/1993	9/15/1998	Expired	Primary DOE	True	<del></del>	Arms Control and Nonproliferation	R&D Nuclear Mat Control & Accounting for Safeguards
	Research an	d Developme	nt (R&D) Concernir	ng Nuclea	r Material Control a	and Accounting Measures for Safeguar	•
Comment:	On January 2 safeguards.	7, 2000, PNC'	s successer organiza	ation, the	Japan Nuclear Cycle	Development Institute (JNC), and DOE e	entered into new agreement to continue cooperation in international
4/11/1995	1/31/2000	Expired	Primary DOE	True		Nuclear Energy	Nuclear Technologies
Title:	Agreement b Technologies	etween the D	epartment of Energ	y of the l	Inited States of Am	nerica and the Power Reactor and Nucl	ear Fuel Development Corporation in the Field of Nuclear
Comment:	Replaces and Liquid Metal (	supersedes t cooled Fast Bi	he Agreement betwe reeder Reactors sign	en the Un ed on Jan	ited States Departmuary 11, 1991.	ent of Energy and the Power Reactor and	Nuclear Fuel Development Corporation of Japan in the Field of
4/11/1995	4/11/2005	In Force	Primary DOE	False		Nuclear Energy	Nuclear Reactor Technologies R&D
	Reactor Tech	nologies Re	search and Develop	ment			apanese Research Organizations for Cooperation in Nuclear
Comment:	Provide a veh JAERI and CF	icle for coope RIEPI to coope	ration between DOE erate in nuclear react	and its na or techno	tional laboratories, E ogies R&D.	PRI and the Advanced Reactor Corporat	ion, and the Japanese R&D Organizations, including PNC, JAPC,
7/17/1995	7/17/2005		Primary DOE	True		Nuclear Energy	Nuclear Research and Development - JAERI
	Developmen						esearch Institute in the Field of Nuclear Research and
Comment:	Cooperation t	conduct pro	grams associated wit	th nuclear	R&D in such areas a	as basic nuclear S&T, nuclear safety, and	advanced nuclear technologies.
3/4/1969		•	Primary DOE	True		Nuclear Energy	Fast Breeder Reactors
Title:	Arrangement	between the	United States Ator	nic Energ	y Commission and	the Power Reactor and Nuclear Fuel D	Development Corporation on Fast Breeder Reactors
					iquid Metal-Cooled	Fast Breeder Reactors.	
7/7/1989	3/31/1994	Expired	Primary DOE	True		Nuclear Energy	IFR Technology Program with CRIEPI
				ent of En	ergy and the Centra	I Research Institute of Electric Power	Industry of Japan for a Joint Work Program on I FR Technology
	RESEARCH		<del></del>				
7/31/1990	7/31/2000	Expired	Primary DOE	False		Nuclear Energy	Liquid Metal-Cooled Fast Breeder Reactors
l itle:	Agreement b Fast Breeder	etween the U Reactors	Inited States Depart	tment of E	energy and the Pow	er Reactor and Nuclear Fuel Developn	nent Corporation of Japan in the Field of Liquid Metal-Cooled
			ay Agraamant hatwa	en USDO	and PNC of Japan	for Cooperation in the Field of Nuclear Te	echnologies, concluded 4/11/95. Successor to the January 31, 1979
	Replaced and LMFBR Agree	superseded to ment, as ame	ended and extended.	Exchang	es in Fast Breeder R	teactors began with the March 4, 1969 an	rangement between AEC and PNC
	Replaced and LMFBR Agree 7/31/1990	superseded to ment, as ame Expired	ended and extended.  Primary DOE	Exchang False	es in Fast Breeder R	Nuclear Energy	rangement between AEC and PNC Fast Breeder Reactors
1/31/1979	7/31/1990	Expired  etween the U	Primary DOE	Exchang False	es in Fast Breeder R	Nuclear Energy	rangement between AEC and PNC
1/31/1979 Title:	7/31/1990 Agreement B Fast Breeder	Expired etween the U Reactors	Primary DOE	False tment of l	es in Fast Breeder H	Nuclear Energy	rangement between AEC and PNC Fast Breeder Reactors
Comment: 1/31/1979 Title:	7/31/1990 Agreement B Fast Breeder	Expired  etween the L Reactors  ne March 4, 19	Primary DOE  Primary DOE  Inited States Depare	False tment of lactor Arra	es in Fast Breeder H	Nuclear Energy	rangement between AEC and PNC Fast Breeder Reactors

tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Action Shee on "Transpa	t 21 between rency" in Nu	the Power Reactor clear Nonproliferati	and Nucle on	ear Fuel Developm	ent Corporation (PNC) of Japan and the	United States Department of Energy (DOE) for Joint Researc
Comment:						1, 20.	
8/28/1996	8/28/1997	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 24 - NDA of Nuclear Materials in Plutonium Canisters
Title:						oration of Japan (PNC) and the United Sterials in Plutonium Canisters	States Department of Energy (DOE) for Joint Development of
Comment:							
3/4/1997	3/4/1999	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 25 - PFPF Remote Monitoring and Software Upgrades (PNC)
Title:	Action Shee		The Power Reactor	and Nucl	lear Fuel Developn	nent Corporation of Japan (PNC) and Th	ne Department of Energy (DOE) for PFPF Remote Monitoring
Comment:							
1/12/1998		Completed	Tertiary DOE	True	Secondary DOE	Arms Control and Nonproliferation	Action Sheet 15 - Installation of Clean Lab
Title:						) and The Japan Atomic Energy Researd Clean Laboratory Facility for Environm	ch Institute (JAERI) for Production of Final Systems ental Sample Analysis
Comment:							
1/12/1998		Completed	Tertiary DOE	True	Secondary DOE	Arms Control and Nonproliferation	Action Sheet 16 - Analysis of Minute Amounts of Nuclear Materials
Title:	Action Shee Amount of N			Departme	nt of Energy (DOE,	) and The Japan Atomic Energy Researd	ch Institute (JAERI) for Study of Technologies to Analyze Mini
Comment:							
10/5/1999	3/31/2000	Completed	Tertiary DOE	True	Secondary DOE	Arms Control and Nonproliferation	Action Sheet 17 Quality Assurance and Quality Contr Practices
Title:	Action Shee Implementin	t 17 between g QA/QC Pra	The United States actices at JAERI Cle	Departme an Chemi	nt of Energy (DOE) stry Laboratory di	) and The Japan Atomic Energy Researd Iring JFY 1999	ch Institute (JAERI) for Joint Cooperation in Establishing and
Comment:							
4/16/1984	12/31/1989	Expired	Primary DOE	False		Nuclear Energy	Three Mile Island
Title:	Agreement to Development		lapanese Participai	nts and the	e United States De	partment of Energy for Japanese Partic	ipation in the Three Mile Island Unit 2 Research and
Comment:	•						
9/27/1985	9/27/1995	Expired	Primary DOE	True		Nuclear Energy	High Temperature Gas Cooled Reactors
	Implementin	g Arrangeme	•	ted Stated	d Department of E	•	search Institute on Cooperation in Research and Development
Comment:	Establishes tl	ne basis for th	e exchange of inform	nation and	personnel, and test	ting of equipment in each other's facilities, i	related to developing the technology for high temperature gas- merica and the Ministry of Foreign Affairs of Japan
12/3/1986	12/2/2001	In Force	Primary DOE	True	,	Nuclear Energy	Radioactive Waste Management
		etween the l	•	ment of E	nergy and the Pow	• • • • • • • • • • • • • • • • • • • •	ent Corp of Japan in the Area of Radioactive Waste
Comment:	_		cooperatively and join	itly technol	logy and techniques	s necessary for the safe management of ra	dioactive wastes.
7/2/1987	7/2/1992	Expired	Primary DOE	False		Civilian Radioactive Waste Managemen	
		•	•	tment of i	Energy and the Jai	pan Atomic Energy Research Institute o	· ·
	Description n				<b>3,</b>	•	•
6/24/1988	6/30/1993	Expired	Primary DOE	False	· · · · · · · · · · · · · · · · · · ·	Electric Field Effects	Electric and Magnetic Field Effects CRIEPI
							• · · · · · · · · · · · · · · · · · · ·

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Start Date	End Date	Status	Agreement Type	Legally	Parent Type	DOE Office	Brief Description
0			[FDI 0 ]"	Binding	I Florida Fi I I F		
7/2/1990	: Established . 7/2/1995				nd Electric Field Effe		Nuclear Metable Control Assessment Body
772/1990	112/1995	Expired	Primary DOE	True		Arms Control and Nonproliferation	Nuclear Materials Control AccountancyProtection - JAERI
Title			Inited States Depar erification, and Phy			an Atomic Energy Research Institute Conc	erning Research and Development in Nuclear Material
Comment	: Cooperation physical prote	on research, d ection. VISITS	levelopment, testing AND ASSIGNMENT	and evalua	ation of technology, on DURATION: To Be I	equipment, and procedures in order to improve Determined. DOE/HQ Contact: Kenneth Sand	nuclear material control, accountancy, verification, and ders, AN-30; (202) 586-7592
11/16/1990		Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 2 - Near-Real-Time Accounting (JAERI)
Title	: Action Shee	t 2 Near-Real	-Time Accounting				
Comment	<u> </u>						
11/16/1990		Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 3 - NDA for the NUCEF (JAERI)
Title	: Action Shee	t 3 Joint Deve	elopment of Nonde	structive A	Assay Techniques f	for the Nuclear Fuel Cycle Safety Engineeri	ng Research Facility (NUCEF)
Comment	<b>.</b>						
11/16/1990		Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 4 - Equipment for FCA Facility
Title	: Action Shee	t 4 Equipmen	it for Fast Critical A	ssembly (	FCA) Facility		
Comment	<u> </u>						
2/5/1992		Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 5 - Automatic Comparison Equipment for (FCA0 (JAERI)
Title	: Action Shee	t 5 Automatic	Comparison Equip	oment for	Fast Critical Assen	nbly (FCA)	
Comment	:		·				
2/1/1995		Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 6 - Remote Monitoring Project (JAERI)
Title		t 6 The United hitoring Project		nt of Energ	gy (DOE) and The J	apan Atomic Energy Research Institute for	Cooperation and Participation in the DOE International
Comment	:						
3/24/1995		-	Secondary DOE		Primary DOE	Arms Control and Nonproliferation	Action Sheet 7 - Near-Real-Time Accounting (JAERI)
Title	: Action Shee Accounting		d States Departmer	nt of Energ	gy and The Japan A	tomic Energy Research Institute (JAERI) fo	r Study of Design and Evaluation of a Near-Real-Time
Comment	:						
3/27/1996		•	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 8 - UFFM for HTTR (JAERI)
Title	: Action Shee Developmer	t 8 between ti it of an Unatte	he United States De ended spent Fuel B	epartment Slock Flow	of Energy (DOE) as Monitoring Systen	nd The Japan Atomic Energy Research Inst n for High Temperature Engineering Test Re	itute (JAERI) for Exchange of Personnel to Support the eactor (HTTR)
Comment	<u>.</u>						
2/14/1997		·	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 12 - Initial Systems Documents for the Clean Lab Facility (JAERI)
Title	: Action Shee Requiremen	t 12 between t Documents	The United States for the Design, Co.	Departme nstruction	nt of Energy (DOE) , and Operation of	and The Japan Atomic Energy Research In a Clean Laboratory Facility for Environmen	stitute (JAERI) for Production of Initial System tal Sample Analysis
Comment	<u>:</u>						
		•	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 13 - Study of Tech to Analyze Minute Amounts (JAERI)
2/14/1997			The United States	Donartmo	nt of Energy (DOE)	and The Japan Atomic Energy Research In	stitute (JAERI) for Study of Technologies to Analyze Minu
		t 13 between luclear Mater		Берагане	<b>3</b> , ,		
	Amount of N						

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Remains in fo		s the Agreement bet	ween USA	and Japan on Coop	eration in Research and Development in Science	ce and Technology Agreement, signed on May 1, 1980
4/9/1984	12/31/1987	Expired	Primary DOE	False	Intergovernmental	Nuclear Energy	Nuclear Physics
Title:	Arrangemen	t between the	e United States Dep	partment o	of Energy and the J	apan Atomic Energy Research Institute on C	cooperation in Research in the area of Nuclear Physics
Comment:							
4/26/1984	4/26/1994	Expired	Primary DOE	False	Intergovernmental	Electric Field Effects	Electric Field Effects - MITI
Title:	Implementin Electric Field	g Arrangeme d Effects	ent between the Min	istry of In	ternational Trade a	nd Industry of Japan and the Department of	Energy of the United States of America in the Area of
Comment:	RESEARCH	AND FINAL A	NALYSIS, Jan 28, 1	1988 excha	ange of letters amen	ded and extended the agreement for an addition	n 5 years.
5/3/1996	5/3/2001	In Force	Primary DOE	True	Intergovernmental	Science and Technology	DOE/STA Basic Science & Technology
Title:	Implementing and Technol		ent between the Dep	oartment o	of Energy of the Un	ited States of America and the Science and	Technology Agency of Japan in the Field of Basic Scienc
Comment:			joint projects in the fi e Relativistic Heavy I				edical application of the radiation produced by accelerators;
7/31/1980	8/31/1981	Terminated	Primary DOE	False	Intergovernmental	Fossil Energy	Coal Liquefaction/SRC-II
Title:	Agreement l	etween the C	Government of the	United Sta	ites of America and	I the Government of Japan on Cooperation is	n Coal Liquefaction Using the SRC-II Process
Comment:							
9/30/1981	2/1/2000	Expired	Primary DOE	False	Intergovernmental	Energy Efficiency and Renewable Energy	Photosynthesis
Title:	Exchanges	of Notes Esta	blishing the Coope	rative Pho	otoconversion and	Photosynthesis Research Program	
Comment:	Establishes p means of pho		information exchang	e as well a	as some joint equipm	ent developments, in research (biological, phys	ical and chemical) in the area of solar energy conversion by
5/7/1982	5/31/1992	Expired	Primary DOE	False	Intergovernmental	Energy Efficiency and Renewable Energy	Solar Energy
Title:	Implement A	rrangement i	between the United	States De	epartment of Energ	y and the Agency of Industrial Science and T	Technology of Japan in the Field of Solar Energy
Comment:							
1/25/1983	5/1/2005	In Force	Primary DOE	True	Broad	Fusion Energy	Fusion Energy - MITI
	-		•	•		esearch and Development	
		ffect as long a	as the Exchange of N	lotes betwe	een USA-Japan on (	Cooperation in Fusion Research and Developme	ent
1/25/1983	5/1/2005	In Force	Primary DOE	True	Broad	Fusion Energy	Fusion Energy - STA - Primary DOE agreement
Title:	Exchange of	f Letters estai	blishing the STA-D	OE Coope	eration in Fusion Re	esearch and Development	
Comment:	Remains in e	ffect as long a	as the Exchange of N	lotes between	een USA-Japan on (	Cooperation in Fusion Research and Developme	ent
9/18/1987	9/30/1990	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 5 - Collaborative Program for MHTGR/HTTR Development
Title:						artment of Energy and the Japan Atomic Ene nex 5. Collaborative Program for MHTGR an	ergy Research Institute on Cooperation in Research and nd HTGR Development
	CONTINUE	FFORTS TO	DEVELOP SPECIFI	C AREAS	FOR COOPERATION	ON (COOPERATIVE PROJECTS)	
3/26/1993	3/26/1997	Expired	Secondary DOE	False	Primary DOE	Environmental Restoration and Waste Management	Characterization and Predictive Technologies
	Annex to ag collaborative	reement betw e program on	veen Power Reacto n mass transport: cl	r and Nuc haracteriz	lear Fuel Developm ation and predictive	ent Corp of Japan (PNC) & USDOE on coope e technologies	eration in area of radioactive waste management
Title:			of the fundamental a	physics an			le in the safety of radioactive waste disposal and develop
				release an False	d transport of radion	uclides in heterogeneous geologic media.	

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Comment: 12/7/1987			<u> </u>	Binding			
	7/31/1992	Expired	Secondary DOE	False	Primary DOE	Environmental Restoration and Waste Management	Assignment of Personnel to Shippingport Station
Title:			the United States D dent to the Agreem				ertaining to the Assignment of Personnel to the
Comment:							
3/31/1988	3/31/1992	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 1 - Remote-Controlled NDA for MOX Fuel
Title:	Specific Men Japan (PNC) Fuel	norandum of for Joint Dev	Agreement (SMA) velopment of Remo	between to te-Contro	he United States E lled Nondestructiv	Department of Energy (DOE) and the Power R re Assay Safeguards Techniques for Automa	eactor and Nuclear Fuel Development Corporation of ted Production of Mixed uranium-Plutonium Oxide (MOX)
Comment:	PERMANENT	COORDINA	TING GROUP MEE	TING, OCT	TOBER 1991		
11/30/1988	11/30/1992	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 2 - Near-Real-Time Accounting Mixed Oxide Fuel Fab
Title:	Specific mer accounting t	norandum of for a mixed o	agreement betwee xide fuel fabrication	n USDOE n facility	- Power Reactor &	Nuclear Fuel Development Corp of Japan (F	NC) for joint systems analysis studies of near real time
Comment:	TECH INTER	CHANGE MT	G AT LANL (6/91) R	E:VALIDA	TION OF COMPUT	ER MODEL USING OPERATIONAL DATA FRO	M PFPF
3/30/1990	9/15/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 3 - NDA for Feed Pu Storage in Auto Production of MOX
Title:	(PNC), the page	arties, for Joi					Reactor and Nuclear Fuel Development Corp of Japan ed Plutonium Storage in Automated Production of Mixed
			on of a remote-controoratory and the Jap				FPF. The work performed under this SMA shall be performed
8/12/1983	4/30/1986	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Fast Breeder Fuel Criticality Data
Title:		m of Agreem nta Developm		ited State	s Department of E	nergy and the Power Reactor and Nuclear Fu	el Development Corporation, Japan in the Area of
Comment:					· · · · · · · · · · · · · · · · · · ·		
9/30/1983	12/31/1989	Expired	Secondary DOE	False	•	Nuclear Energy	Fast Breeder Reactors/CRBR-MONJU
						nergy and the Power Reactor and Nuclear Fu pe Fast Breeder Reactor Project	el Development Corporation of Japan for Cooperation in
Comment:							
1/13/1984	12/31/1988	Expired	Secondary DOE		Primary DOE	Nuclear Energy	Fast Reactor Safety Design Criteria
	Specific Mer of a Commo	norandum of n Approach t	Agreement between o LMFBR Safety De	en the Uni esign Crit	ted States Departn eria	nent of Energy and the Power Reactor and N	uclear Fuel Development Corporation of Japan in the area
Comment:							
3/29/1985 Title:	3/31/1990 <b>Memorandu</b> i	Expired m of Agreeme	Secondary DOE ent between the Po		Primary DOE tor and Nuclear Fu	Nuclear Energy rel Development Corporation of Japan and th	Radioactive Liquid-Fed Ceramic Melter e United States Department of Energy for the Collaborative
	Testing of a	Radioactive i	Liquid-Fed Ceramic	: Meiter		·	
Comment:					· · · · · · · · · · · · · · · · · · ·		
11/15/1985	3/31/1997	Expired	Secondary DOE		Primary DOE	Nuclear Energy	Fuels & Materials Development SMA
	Developmen	t of Fuels an	d Materials for Liqu	ıid Metal F	Reactors.	<b>U</b>	uclear Fuel Development Corporation of Japan for the
						eactors. Original Term until March 31, 1992.	
11/20/1986	12/31/1988	Expired	Secondary DOE		Primary DOE	Nuclear Energy	LMFBR Cores
TiAl.	Specific Mer	norandum of	Agreement between	en the Uni	ted States Departn	nent of Energy and the Power Reactor and No Large Advanced LMFBR Cores	clear Fuel Development Corporation of Japan in a Joint

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All Bilater	al Agreem	ents	<del></del>				
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
6/24/1987	6/30/1992	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Nuclear Fuel Cycle: LMR Reprocessing Technology
Title:	Memorandu in the Field	m of Agreeme of the Nuclea	ent between the Unit r Fuel Cycle: Liquid	ited State d Metal Re	s Department of En eactor (LMR) Repro	nergy and the Power Reactor and Nuclear Fuel De acessing Technology	evelopment Corporation, Japan for Joint Collaboration
Comment:	TECHNOLO	GY EXCHANG	E IN REPROCESSI	NG			
9/21/1987	12/31/1995	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Testing of Oxide Fuel in EBR-II
Title:	Specific Mei Collaborativ	norandum of e Program of	Agreement betwee Operational Testin	n the Unit g of Oxide	ted States Departm e Fuel in EBR-II	ent of Energy and the Power Reactor and Nuclea	ar Fuel Development Corporation of Japan for a
Comment:	DOE to perfo	rm specialized	EBR-II Operational	Reliability	Testing (ORT) in co	llaboration with PNC for the long-life core system de	evelopment and fuel reliability demonstration.
1/14/1988	12/31/1989	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Spatial Decoupling Experiments in LMFBR Cores
			Agreement betwee ial Decoupling Expe				ar Fuel Development Corporation of Japan in a Joint
Comment:							
8/19/1988	8/31/1992	•	Secondary DOE	False	Primary DOE	Nuclear Energy	SMA - Centralized LMFBR Component Database
	of a Coopera	ative Program	n for the Developme	ent of a Ce	entralized LMFBR (	ent of Energy and the Power Reactor and Nuclea Component Reliability Data Base and Data Base I	ar Fuel Development Corporation of Japan in the area Management System
			DATA BASE MANAG				
1/29/1983	5/1/2005		Primary DOE	True	Broad	Fusion Energy	Fusion Energy - Monbusho - Primary DOE agreement
						sion Research and Development	
						Cooperation in Fusion Research and Development	
5/19/1986	2/1/2000	Expired	Primary DOE		Intergovernmental		Coal R&D - AIST
	•		•	•			of Energy in Coal Energy Research and Developmen
						er to accelerate development of coal energy R&D eff	
10/16/1987	5/1/2005	In Force	Primary DOE	True	Intergovernmental		Coal R&D - AIST and ANRE
	Department	of Energy in	Coal Research and	Develop	nent	d Technology and the Agency of Natural Resour	•
Comment:	Establish cor components	nprehensive c for coal conve	ooperation in the are rsion and utilization;	a of coal e pollution c	energy R&D in order control technology re	to accelerate development of coal R&D efforts, i.e., lated to coal conversion and utilization.	coal liquefaction, coal gasification; materials and
6/15/1978	12/31/1988	Expired	Primary DOE	False	Intergovernmental	Energy Efficiency and Renewable Energy	Geothermal
Title:	Implementin Applications		ent between the Uni	ted States	Department of En	ergy and the Agency of Industrial Science and To	echnology of Japan in the Field of Geothermal Energ
Comment:	Originally und US and Japa	der the July 15 n on Cooperat	5, 1974 US-Japan Ag tion in Research and	reement o Developm	n Cooperation in the nent in Energy and F	e Field of Energy Research and Development which Related Fields.	was superseded by the May 2, 1979 Agreement betwee
5/2/1979	12/31/1980	Completed	Primary DOE	True	Intergovernmental	Fossil Energy	Coal Liquefaction/SRC-II
Title:						the United States of America concerning Japan liquid solvent refined coal products (SRC-II proje	ese participation in Phase Zero of the Multiphase ct)
Comment:	Maintaining a DOE/HQ CO	and intensifying NTACT: Karir	g cooperation in rese n Berry, IE-12, (202)	earch and o 586-5900;	development in ener FTS: 896-5900	gy and related fields. VISITS AND ASSIGNMENTS	: Executed under project agreements. DURATION: N/A
8/24/1979	5/1/2005	In Force	Primary DOE	False	Intergovernmental	Fusion Energy	Fusion Energy/Coordinating Committee
Title:	Exchange of	f Letters Esta	blishing a Coordina	ating Com	mittee on Fusion E	Energy	
Comment:	Establish a Cand to ensure	oordinating Coethe the overall pl	ommittee on Fusion l lanning and oversigh	Energy to to	facilitate the coording cooperative activities	ation and implementation of cooperative activities in	the area of fusion as well as to assure proper balance
8/28/1979	8/28/2000	In Force	Primary DOE	True	Intergovernmental	Fusion Energy	Fusion Energy/Doublet III
Title:	Agreement i	between the l	United States Depar	tment of l	Energy and the Jap	an Atomic Energy Research Institute on Cooper	ation in Doublet III Project
Comment:	Undertake ex	cperimental res	search on tokamak p	lasmas wi	th doublet and dee-s	shaped cross-sections in the Doublet III, a tokamak f	acility, located in LaJolla, California.
11/11/1979	5/1/2005	In Force	Primary DOE	True	Intergovernmental	High Energy Physics	High Energy Physics

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:		g Arrangeme Energy Phys			of Energy of the Un	ited States of America and the Ministry of E	ducation, Science and Culture of Japan on Cooperation in
Comment:	Establish a fra	amework for c	cooperation in the fiel	ld of high e forces for	energy physics inclu- the duration of the l	ding research; accelerator and detector instrum J.SJapan R&D in Energy and Related Fields A	entation R&D the fabrication and subsequent use of new Agreement signed on May 2, 1979
2/9/1983	12/31/1987	Expired	Primary DOE	False	Intergovernmental	High Energy Physics	Neutron Scattering - STA
Title:	Implementin in Neutron S		nt between the Dep	oartment o	of Energy of the Un	ited States of America and the Science and	Technology Agency of Japan concerning Joint Research
Comment:	Remains in for		s the Agreement bet	ween USA	and Japan on Coop	peration in Research and Development in Scien	ce and Technology Agreement, signed on May 1, 1980
1/27/1994	12/31/1994	Expired	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Upgraded Glove Box Accounting Systems
Title:	Joint develo	pment of was	ite measurement s	ystems an	d development and	d application of upgraded glove box accoun	ting systems.
Comment:							
1/27/1994	9/30/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 15 - Waste Measurement System Glove Box Acct Systems (PNC)
Title:	Action Shee Measuremer	t 15 between It Systems ai	the Department of nd Development an	Energy (D d Applica	OE) and the Power tion of Upgraded G	r Reactor and Nuclear Fuel Development Co Blove Box Accounting Systems	rporation of Japan (PNC) for Joint Development of Waste
Comment:	Joint develop	ment of waste	measurement syste	ems and de	evelopment and app	lication of upgraded glove box accounting syste	ems. DOE/HQ CONTACT: Kenneth Sanders, NN-44, 586-846
3/10/1995	3/10/1996	Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 16 - Fundamental Design of C/S System
Title:	Action Shee Fundamenta	t 16 The Unit I Design of C	ed States Departm /S System for the F	ent of Ene PFPF Adva	ergy (DOE) and the anced Thermal Rea	Power Reactor and Nuclear Fuel Developme ctor (ATR) Fuel Fabrication Line Fuel Pin St	ent Corporation of Japan (PNC) for Joint Studies of the orage
Comment:							
3/17/1995	3/17/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 17 - NDA of holdup and scrap materials
Title:	Action Shee Improved Sa	t 17 The Unit feguards Me	ed States Departmethods for Nondestr	ent of Ene uctive As:	ergy (DOE) and the say Measurements	Power Reactor and Nuclear Fuel Developme of Holdup and Scrap Materials	ent Corporation of Japan (PNC) for Joint Development of
Comment:							
7/31/1995	1/31/1997	•	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 18 - Install Fuel Assembly SystemFuge Reactor (PNC)
Title:			The Power Reactor Fugen Reactor in .		lear Fuel Developm	ent Corporation of Japan (PNC) and The De	partment of Energy (DOE) for Installation of Fuel Assembl
Comment:	Description n	ot available in	History				
7/31/1995	1/31/1997	Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 19 - Measuring Vitrified High Level Waste Canisters (PNC)
Title:			The Power Reactor leasuring Vitrified H			ent Corporation of Japan (PNC) and The De	partment of Energy (DOE) for Development of a
Comment:	Development			stem for v	erifying the plutoniur	n content in the canisters containing vitrified hig	gh level waste at the Tokai Vitrificatioin Facility in Japan
11/2/1995	5/2/1997	Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 20 - RMS for nuclear nonproliferation
Title:			The Power Reactor Iclear Nonprolifera		lear Fuel Developm	ent Corporation of Japan (PNC) and The De	partment of Energy (DOE) for Development of a Remote
Comment:							
3/19/1986	3/31/1990	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Annex 1 Collaborative Program for Fission Chamber Test
	Developmen	Implementir t in the Area	ng Arrangement bei of High Temperatu	tween the re Gas-Co	United States Dep oled Reactors An	artment of Energy and the Japan Atomic En nex I. Collaborative program for Fission Cha	ergy Research Institute on Cooperation in Research and amber Test
Comment:							
3/24/1986	3/31/1991	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 2 - Coated Particle Fuel Performance Test

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment	: IRRADIATIO	NTEST (DOE	FUEL); INITIAL ACC	IDENT H	EATUP TESTING		
5/22/1987	9/30/1990	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 3 - Graphite Materials Development Testing
Title	: Annex to the Developmen	Implementing tin the Area	ng Arrangement bet of High Temperatur	ween the e Gas-Co	United States Dep oled Reactors	artment of Energy and the Japan A	Atomic Energy Research Institute on Cooperation in Research and
Comment	: CONTINUE V	VORK ON 7 C	NGOING TASK AG	REEMENT	S INCLUDING IRR	ADIATION - CREEP, OXIDATION, F	FATIGUE, ETC.
1/11/1990	1/11/2005		Tertiary DOE	True	•	Fusion Energy	Annex 9 - Data Link
	and Develop	ment for the	DOE-JAERI Collabo	ration on	the Data Link		ed States Department of Energy on Cooperation in Fusion Research
Comment	theory/experi	nent comparis	son; (3) access to co	mputers ir	nhome countries by	on researchers of the Parties through visiting scientists for computations re (301) 903-4932; FTS: 233-4932	n (1) code development and/or usage; (2) data analysis and/or elated to purpose of visit; (4) administration of the Data Link. VISITS: Yes
11/1/1989	11/30/1991	Completed	Tertiary DOE	False	Secondary DOE	Fusion Energy	Annex 10 - TV Thomson Scattering System for JFT-2N
Title	: Annex X to t Research an	he Implemen d Developme	ting Arrangement b ent for the DOE-JAE	etween ti RI Collab	ne Japan Atomic E orative Program o	nergy Research Institute and the U n a TV Thomson Scattering Syster	Inited States Department of Energy on Cooperation in Fusion n for JFT-2M
			N OF HARDWARE				
4/16/1992	4/16/1997	Completed	Tertiary DOE	False	Secondary DOE	Fusion Energy	Annex 11 - Test Negative Ion Sources AcceleratorsInjectors
	and Develop	ment for the	DOE-JAERI Collabo	ration on	the Testing of Ne	gative Ion Sources and Accelerato	
Comment	: Perform joint to the next ge FTS: 233-306	neration of fu	using the test facilities sion experimental de	at LBL a vices. VIS	nd JAERI to optimiz	e the production and acceleration of MENTS: Yes DURATION: To Be D	hydrogen and deuterium negative ion beams, which would be applicable letermined DOE/HQ Contact: Michael Roberts, ER-52; (301) 353-3068;
9/26/1985	12/31/1991	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Reactor Shielding
Title	: Specific Men Program of I	norandum of Reactor Shiel	Agreement betwee ding Research	n the Unit	ted States Departm	ent of Energy and the Power Read	ctor and Nuclear Fuel Development Corporation of Japan in a Joint
Comment	: CONDUCT O	F SHIELDING	MEASUREMENTS				
2/10/1979	12/31/1982	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Fast Reactor Safety
Title	: Specific Men Reactor Safe	norandum of ty in Liquid I	Agreement betwee Metal Cooled Fast B	n the Unit reeder Ro	ted States Departm eactors	ent of Energy and the Power Read	ctor and Nuclear Fuel Development Corporation, Japan I the Area of
C	:					· · · · · · · · · · · · · · · · · · ·	
Comment		Evaluad	Secondary DOE		Primary DOE	Nuclear Energy	Fast Reactor Fuel Development
11/14/1979		Expired	•				
11/14/1979 <b>Title</b>	: Specific Men Fuel Develop	norandum of oment in Liqu	id Metal Cooled Fa	n the Unit st Breede	ted States Departm r Reactors	ent of Energy and the Power Read	ctor and Nuclear Fuel Development Corporation, Japan in the Area o
11/14/1979 Title Comment	: Specific Men Fuel Develop : SMA on Fuel	norandum of ment in Liqu Performance	and Power-to-Melt	st Breede	r Reactors		
11/14/1979 Title Comment 12/26/1979	: Specific Men Fuel Develop :: SMA on Fuel 12/31/1981	norandum of oment in Liqu Performance Expired	id Metal Cooled Fas and Power-to-Melt Secondary DOE	False	Primary DOE	Nuclear Energy	ctor and Nuclear Fuel Development Corporation, Japan in the Area o  Fast Reactor Dosimetry
11/14/1979 Title Comment 12/26/1979 Title	: Specific Men Fuel Develop : SMA on Fuel 12/31/1981 : Specific Men Cooperative	norandum of oment in Liqu Performance Expired norandum of	id Metal Cooled Fas and Power-to-Melt Secondary DOE	False	Primary DOE	Nuclear Energy	ctor and Nuclear Fuel Development Corporation, Japan in the Area o
11/14/1979	: Specific Men Fuel Develop : SMA on Fuel 12/31/1981 : Specific Men Cooperative	norandum of ment in Liqu Performance Expired norandum of Materials Do	id Metal Cooled Fas and Power-to-Melt Secondary DOE Agreement betwee simetry for Liquid M	False n the Unit	Primary DOE ted States Departm led Fast Breeder R	Nuclear Energy nent of Energy and the Power Read leactors	ctor and Nuclear Fuel Development Corporation, Japan in the Area o  Fast Reactor Dosimetry  ctor and Nuclear Fuel Development Corporation, Japan in the Area o
11/14/1979	: Specific Men Fuel Develop : SMA on Fuel 12/31/1981 : Specific Men Cooperative : 12/31/1982	norandum of iment in Liqui Performance Expired norandum of Materials Do  Expired	and Power-to-Melt Secondary DOE Agreement betwee simetry for Liquid N Secondary DOE	False n the Unit fetal Coo	Primary DOE ted States Departm led Fast Breeder R Primary DOE	Nuclear Energy nent of Energy and the Power Read eactors  Nuclear Energy	Fast Reactor Development Corporation, Japan in the Area of Fast Reactor Dosimetry  Stor and Nuclear Fuel Development Corporation, Japan in the Area of Fast Reactor Fuel Performance
11/14/1979	: Specific Men Fuel Develop : SMA on Fuel 12/31/1981 : Specific Men Cooperative : 12/31/1982 : Memorandur Reactor Mixe	porandum of the performance Expired morandum of Materials Do Expired m of Agreement of Agreement of Agreement in Control of Agreement of Agreement in Control of Agreement of	and Power-to-Melt Secondary DOE Agreement betwee simetry for Liquid N Secondary DOE	False n the Unit fetal Coo False ted State	Primary DOE ted States Departm led Fast Breeder R Primary DOE	Nuclear Energy nent of Energy and the Power Read eactors  Nuclear Energy	ctor and Nuclear Fuel Development Corporation, Japan in the Area o  Fast Reactor Dosimetry  ctor and Nuclear Fuel Development Corporation, Japan in the Area o
11/14/1979	: Specific Men Fuel Develop : SMA on Fuel 12/31/1981 : Specific Men Cooperative : 12/31/1982 : Memorandur Reactor Mixe	porandum of the performance Expired morandum of Materials Do Expired m of Agreement of Agreement of Agreement in Control of Agreement of Agreement in Control of Agreement of	and Power-to-Melt Secondary DOE Agreement betwee simetry for Liquid Mesondary DOE Secondary DOE	False n the Unit fetal Coo False ted State	Primary DOE ted States Departm led Fast Breeder R Primary DOE	Nuclear Energy nent of Energy and the Power Read eactors  Nuclear Energy	Fast Reactor Development Corporation, Japan in the Area o  Fast Reactor Dosimetry  Stor and Nuclear Fuel Development Corporation, Japan in the Area o  Fast Reactor Fuel Performance

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	fusion concep	ots; magnetic s		tee and to	sma engineering; fu	sion-reactor materials; fusion-systems engineer	tokamaks; joint research related to plasma physics; magnetic ing; environmental and safety aspects of fusion energy;
3/1/1984	12/31/1988	Completed	Secondary DOE	False	Primary DOE	Nuclear Energy	Tritium Handling at TSTA
Title:	Exchange of	Letters estab	blishing the Agreen	ent for C	ollaborative Progr	am for the development of tritium handling c	omponents
Comment:							
7/17/1987	7/19/2001	In Force	Secondary DOE	True	Primary DOE	Fusion Energy	Annex 1 - Irradiation Effects Utilizing Fission Reactor
Title:			ange of letters betw sion materials utiliz			ation (Monbusho) and USDOE on cooperatio	n in fusion R&D for collaboration in fundamental studies
Comment:	JOINT IRRAI	DIATION AND	EVALUATION EXPE	RIMENT	S ON MATERIALS		
12/12/1988	12/21/2003	In Force	Secondary DOE	True	Primary DOE	Fusion Energy	Annex 2 - Data Link & Data Link Projects for Fusion
	Developmen	t Monbusho-l	DOE Collaboration			o of Japan and the Department of Energy of t k Projects for Fusion	the United States on Cooperation in Fusion Research and
		COMMITTEE N					
2/9/1982		•	Secondary DOE		Primary DOE	Fusion Energy	Rotating Target Neutron Source
	•	Letters betw	een DOE and Monb	usho on	the Rotating Targe	t Neutron Source (RTNS-II) Cooperative Proj	ect
Comment:					<del></del>		
3/29/1983	12/31/1987	Expired	Secondary DOE	False	Primary DOE	High Energy Physics	Neutron Scattering - ISSP
	Scattering		-			stitute for Solid State Physics, University of ement on Neutron Scattering	Tokyo on Cooperation in Research in the Area of Neutron
4/26/1984	4/26/1989	Expired	Secondary DOE		Primary DOE	Electric Field Effects	CRIEPI - Electric Field Effects
			•		•		of the Electric Power Industry of Japan in the Area of
	Electric Field			<b>3</b> ,			· · · · · · · · · · · · · · · · · · ·
Comment:							
3/30/1990	9/15/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 4 - Authentication & Identification of MOX Fuel
Title:	Specific Mer for Joint Dev Fuel	norandum of velopment of	Agreement betwee Authentication Tec	n the Unit hnologies	ed States Departn and Item Identific	nent of Energy and the Power Reactor and No eation Safeguards Techniques for Automated	uclear Fuel Development Corp of Japan (PNC), the parties I Production of Mixed Uranium-Plutonium Oxide (MOX)
Comment:		at the Sandia				dentification system to the temporary plutonium TS AND ASSIGNMENTS: Yes DURATION: T	storage in PFPF. The work performed under this SMA shall
							o be betermined DOE/NG CONTACT. Renneth Sanders, A
3/31/1990	9/15/1998		Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 5 - Pu Isotopic & Concentration for Chemical Process
	Specific Mer (PNC) for a	Completed  morandum of loint Researce	Agreement (SMA) I	etween to Study of	he United States D Plutonium (Pu) Is	epartment of Energy and the Power Reactor	SMA 5 - Pu Isotopic & Concentration for Chemical
Title:	Specific Mei (PNC) for a Solutions by	Completed morandum of loint Researc Gamma Mea	Agreement (SMA) I h and Development surement of Resin	etween to Study of Bead San	he United States D Plutonium (Pu) Iso nples	epartment of Energy and the Power Reactor otopic and Concentration Measurements for	SMA 5 - Pu Isotopic & Concentration for Chemical Process  and Nuclear Fuel Development Corporation of Japan
Title:	Specific Mei (PNC) for a Solutions by	Completed morandum of loint Researc Gamma Mea effort in Pu iso	Agreement (SMA) I h and Development surement of Resin	petween to Study of Bead San on measu	he United States D Plutonium (Pu) Iso nples	epartment of Energy and the Power Reactor otopic and Concentration Measurements for	SMA 5 - Pu Isotopic & Concentration for Chemical Process and Nuclear Fuel Development Corporation of Japan Chemical Processing Plant Input Accountability Tank
Title: Comment: 3/31/1990	Specific Mer (PNC) for a Solutions by Cooperative 6/30/1991 Specific Mer	Completed morandum of  loint Researc r Gamma Mea effort in Pu iso Completed morandum of	Agreement (SMA) It hand Development is urement of Resin topic and concentrating Secondary DOE  Agreement (SMA) It	petween to Study of Bead San on measu True petween to	he United States D Plutonium (Pu) Isonples rement for input acc Primary DOE the Department of I	Department of Energy and the Power Reactor otopic and Concentration Measurements for countability tank solutions by gamma measurem Arms Control and Nonproliferation	SMA 5 - Pu Isotopic & Concentration for Chemical Process  and Nuclear Fuel Development Corporation of Japan Chemical Processing Plant Input Accountability Tank  ent of resin bead samples. Original term was for 9 months  SMA 6 - Fissile Inventory Verifi. Isotope Dilution Tech.  clear Fuel Development Corporation of Japan (PNC) for a
Title:  Comment: 3/31/1990 Title:	Specific Mei (PNC) for a Solutions by Cooperative 6/30/1991 Specific Mei Joint Reseau Cooperative	Completed morandum of loint Researc r Gamma Mea effort in Pu iso Completed morandum of rch and Devel effort in the dependent of the lower of the low	Agreement (SMA) It hand Development surement of Resin topic and concentrate Secondary DOE Agreement (SMA) It lopment Study of Fivelopment of a tank	petween to Study of Bead San ion measu True petween to ssile Inve	he United States D Plutonium (Pu) Isonples rement for input acc Primary DOE he Department of I entory Verification d fissile material me	Department of Energy and the Power Reactor otopic and Concentration Measurements for countability tank solutions by gamma measurem Arms Control and Nonproliferation Energy (DOE) and the Power Reactor and Nu of Reprocessing holding tanks Using Isotopicasurement method involving a Jutetium double	SMA 5 - Pu Isotopic & Concentration for Chemical Process  and Nuclear Fuel Development Corporation of Japan Chemical Processing Plant Input Accountability Tank  ent of resin bead samples. Original term was for 9 months  SMA 6 - Fissile Inventory Verifi. Isotope Dilution Tech

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tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Specific Mer (PNC) for Jo	norandum of int Developm	Agreement betwee ent of Remote-Con	n the Uni trolled No	ted States Depart andestructive Ass	tment of Energy (DOE) and the Power React say Safeguards Techniques for Process Hol	or and Nuclear Fuel Development Corporation of Japan dup in Pu Conversion Development Facility (
Comment:	Development will be perfore	and application	on of a remote-contro and the PCDF. Orig	olled NDA inal term v	system for plutoni	um holdup to the process equipment in the PNC	C Plutonium Conversion Development Facility (PCDF). The wor
1/25/1991	9/15/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 8 - Safeguards Techniques for Monitors JOYO Reactor
	(PNC) for Jo	int Developm	ent of Remote-Con	trolled Sa	ifeguards Technic	ques for the Monitors for the JOYO Reactor	
Comment:	Development for 2 years	of software ar	nd application of rem	ote-contro	olled monitors for fr	resh and spent fuel assemblies for the JOYO R	teactor. LANL will perform the work for DOE. Original terms wa
1/31/1991	9/15/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 9 - Safeguards Techniques for Monitors MONJU Reactor
Title:	Specific Mer Japan (PNC)	norandum of for Joint Dev	Agreement (SMA) I relopment of Remo	between t te-Contro	he United States liled Safeguards	Department of Energy (DOE) and the Power Techniques for Monitors for the MONJU Rea	Reactor and Nuclear Fuel Development Corporation of actor
Comment:	ACQUISITIO	N OF GRAND	<b>ELECTRONICS &amp; A</b>	ASSOC. C	OMP. & LEVEL O	F SOFEWARE FOR SAFEGUARD SYSTEM. C	Original terms was for 2 years
3/26/1991	9/15/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA 10 - Pu Storage by Passive Gamma Spectroscopy
Title	Specific Mer	norandum of	Agreement (SMA) L	between t	he United States	Department of Energy and the Power React	or and Nuclear Fuel Development Corporation of Japan m Storage by Passive Gamma Spectroscopy 73)
1100	(PNC) specif	fic for Joint S	tuales of Plutonium	CONCEN	a attorr arra 130top		c.c.aga ay . accirc camma opecaloscopy .c,
	(PNC) specii					PMENT OF NEW INTRINSIC K-EDGE DENSIT	
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995	RCHANGE ON Expired	I 1) UPGRADE OF E Secondary DOE	XISTING False	AND 2) DEVELOR Primary DOE	PMENT OF NEW INTRINSIC K-EDGE DENSIT  Arms Control and Nonproliferation	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer	RCHANGE ON Expired morandum of	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1	XISTING False 3) between	AND 2) DEVELOR Primary DOE en the United State	PMENT OF NEW INTRINSIC K-EDGE DENSIT  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Poy	OMER. Original term was for 2 years
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995	RCHANGE ON Expired morandum of for Joint Stu Expired	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual Secondary DOE	False  False  Total Service of Design and False	AND 2) DEVELOR Primary DOE en the United State and Prototype Det Primary DOE	PMENT OF NEW INTRINSIC K-EDGE DENSIT Arms Control and Nonproliferation tes Department of Energy (DOE) and the Povelector Development of Fuel Pin Measurement Arms Control and Nonproliferation	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC)	RCHANGE ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual Secondary DOE Agreement 14 (SMA) tion Detection Auti	False 3) between Design a False A 14) betwhentication	AND 2) DEVELOR Primary DOE on the United State and Prototype Det  Primary DOE  ween the United S	PMENT OF NEW INTRINSIC K-EDGE DENSIT Arms Control and Nonproliferation tes Department of Energy (DOE) and the Povelector Development of Fuel Pin Measurement Arms Control and Nonproliferation	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage  Power Reactor and Nuclear Fuel Development Corporation
Comment: 9/2/1993     Title: Comment: 9/2/1993     Title:	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC)	RCHANGE ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual Secondary DOE Agreement 14 (SMA)	False 3) between Design a False A 14) betwhentication	AND 2) DEVELOR Primary DOE on the United State and Prototype Det  Primary DOE  ween the United S	PMENT OF NEW INTRINSIC K-EDGE DENSIT Arms Control and Nonproliferation tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement Arms Control and Nonproliferation States Department of Energy (DOE) and the Intercept (DOE)	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage  Power Reactor and Nuclear Fuel Development Corporation
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work share	Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed	Secondary DOE Agreement (SMA 1 dies of Conceptual  Secondary DOE Agreement 14 (SMA) Agreement 14 (SMA) Agreement 14 (SMA) Agreement 14 (SMA) Agreement 15 (SMA) Agreement 16 (SMA) Agreement 17 (SMA) Agreement 17 (SMA) Agreement 18 (SMA) Agreement 19 (SMA) Agree	False  False  False  False  False  A 14) between the entication	AND 2) DEVELOR Primary DOE en the United State and Prototype Det  Primary DOE ween the United State on System for the  Primary DOE	PMENT OF NEW INTRINSIC K-EDGE DENSIT Arms Control and Nonproliferation tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement Arms Control and Nonproliferation States Department of Energy (DOE) and the Intercept (DOE)	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage  Power Reactor and Nuclear Fuel Development Corporation
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work shi	Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual Secondary DOE Agreement 14 (SMA) addition Detection Authorities of the President of the Secondary DOE	False  False  False  False  False  A 14) between the entication	AND 2) DEVELOR Primary DOE en the United State and Prototype Det  Primary DOE ween the United State on System for the  Primary DOE	PMENT OF NEW INTRINSIC K-EDGE DENSIT Arms Control and Nonproliferation tes Department of Energy (DOE) and the Povector Development of Fuel Pin Measurement Arms Control and Nonproliferation States Department of Energy (DOE) and the Internation Plutonium Fuel Production Facility (PFPF) Internation	OMER. Original term was for 2 years  SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and
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Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work shi	EXPIRED ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed to 1 Advanced  Completed to 27 between	Secondary DOE  Agreement (SMA 1 dies of Conceptual  Secondary DOE  Agreement 14 (SMA tion Detection Autied at SNL and the PF Secondary DOE  Containment and S  Secondary DOE	False False A 14) between the entication False False False False Furveillan True Energy (I	AND 2) DEVELOR Primary DOE en the United State of Primary DOE ween the United State of System for the Primary DOE ce Primary DOE DOE) for and The	Arms Control and Nonproliferation  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement  Arms Control and Nonproliferation  States Department of Energy (DOE) and the Powel Pintonium Fuel Production Facility (PFPF) If  Arms Control and Nonproliferation  Arms Control and Nonproliferation	SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of nt Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and Surveillance (JAERI)
Comment: 9/2/1993 Title: Comment: 9/2/1993 Title: Comment: 1/16/1990 Title: Comment: 2/24/1997 Title: Comment:	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work sh: Action Shee 2/24/1999 Action Shee Nondestruct	EXPIRED ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed t 1 Advanced  Completed t 27 between tive Assay Tec	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual  Secondary DOE Agreement 14 (SMA) Agreement 15 (SMA) Agreement 14 (SMA) Agreement 15 (SMA) Agreement 14 (SMA) Agreem	False False A 14) between the entication False False False False Furveillan True Energy (I	AND 2) DEVELOR Primary DOE en the United State of Primary DOE ween the United State of System for the Primary DOE ce Primary DOE DOE) for and The	Arms Control and Nonproliferation  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement  Arms Control and Nonproliferation  States Department of Energy (DOE) and the Powel Pintonium Fuel Production Facility (PFPF) If  Arms Control and Nonproliferation  Arms Control and Nonproliferation	SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of nt Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and Surveillance (JAERI)  Action Sheet 27 - NDA for Low Activity Solid Wastes
Comment: 9/2/1993     Title: Comment: 9/2/1993     Title: Comment: 1/16/1990     Title: Comment: 2/24/1997     Title: Comment: 2/24/1997	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work sh: Action Shee 2/24/1999 Action Shee Nondestruct 8/24/1999	EXPIRED ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed to 1 Advanced  Completed to 27 between tive Assay Tec	Secondary DOE  Agreement (SMA 1 dies of Conceptual  Secondary DOE  Agreement 14 (SMA stron Detection Autition Detection Autition Detection Autition DOE  Containment and S  Secondary DOE  The Department of chiniques for Low A  Secondary DOE	False  A 14) between the true  False  A 14) between the true  False  Fulse  Fulse  Fulse  True  Energy (Lactivity Schools)	AND 2) DEVELOR Primary DOE en the United State Primary DOE ween the United Son System for the Primary DOE Primary DOE DOE) for and The Dold Wastes Primary DOE	Arms Control and Nonproliferation  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement  Arms Control and Nonproliferation  States Department of Energy (DOE) and the In Plutonium Fuel Production Facility (PFPF) In Arms Control and Nonproliferation  Arms Control and Nonproliferation  Power Reactor and Nuclear Fuel Development  Arms Control and Nonproliferation	SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and Surveillance (JAERI)  Action Sheet 27 - NDA for Low Activity Solid Wastes ent Corporation of Japan (PNC) for Joint Study of  Action Sheet 28 - RETF Safeguards System
Comment: 9/2/1993	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work shadow shee 2/24/1999 Action Shee Nondestruct 8/24/1999 Action Shee	EXPIRED ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed to 1 Advanced Completed to 27 between tive Assay Tec	Secondary DOE  Agreement (SMA 1 dies of Conceptual  Secondary DOE  Agreement 14 (SMA stron Detection Autition Detection Autition Detection Autition DOE  Containment and S  Secondary DOE  The Department of chiniques for Low A  Secondary DOE	False  A 14) between the entication False  False  A 14) between the entication False  False  False  Furue  Energy (I	AND 2) DEVELOR Primary DOE en the United State Primary DOE ween the United Son System for the Primary DOE Primary DOE DOE) for and The Dold Wastes Primary DOE	Arms Control and Nonproliferation  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement  Arms Control and Nonproliferation  States Department of Energy (DOE) and the In Plutonium Fuel Production Facility (PFPF) In Arms Control and Nonproliferation  Arms Control and Nonproliferation  Power Reactor and Nuclear Fuel Development  Arms Control and Nonproliferation	SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of the Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and Surveillance (JAERI)  Action Sheet 27 - NDA for Low Activity Solid Wastes ent Corporation of Japan (PNC) for Joint Study of
Comment: 9/2/1993         Title: Comment: 9/2/1993         Title: Comment: 1/16/1990         Title: Comment: 2/24/1997         Title: Comment: 2/24/1997	(PNC) specific TECH. INTER 9/2/1995 Specific Mer Japan (PNC) 9/2/1995 Specific Mer Japan (PNC) The work shadow shee 2/24/1999 Action Shee Nondestruct 8/24/1999 Action Shee	EXCHANGE ON Expired morandum of for Joint Stu  Expired morandum of for Video Mo all be performe Completed to 1 Advanced  Completed to 27 between tive Assay Tec  Completed to 28 between Design for the	I 1) UPGRADE OF E Secondary DOE Agreement (SMA 1 dies of Conceptual  Secondary DOE  Agreement 14 (SMA) Agreement 15 (SMA) Agreement 16 (SMA) Agreement 16 (SMA) Agreement 17 (SMA) Agreement 18 (SMA) Agree	False  A 14) between the entication False  False  A 14) between the entication False  False  False  Furue  Energy (I	AND 2) DEVELOR Primary DOE en the United State Primary DOE ween the United Son System for the Primary DOE Primary DOE DOE) for and The Dold Wastes Primary DOE	Arms Control and Nonproliferation  Arms Control and Nonproliferation  tes Department of Energy (DOE) and the Powelector Development of Fuel Pin Measurement  Arms Control and Nonproliferation  States Department of Energy (DOE) and the In Plutonium Fuel Production Facility (PFPF) In Arms Control and Nonproliferation  Arms Control and Nonproliferation  Power Reactor and Nuclear Fuel Development  Arms Control and Nonproliferation	SMA 13 - Fuel PinMOX Fuel Fabrication Facility wer Reactor and Nuclear Fuel Development Corporation of at Techniques for a Mixed Fuel Fabrication Facility  SMA 14 - Video Motion Detection PFPF Product Storage Power Reactor and Nuclear Fuel Development Corporation Product Storage Area  Action Sheet 1 - Advanced Containment and Surveillance (JAERI)  Action Sheet 27 - NDA for Low Activity Solid Wastes ent Corporation of Japan (PNC) for Joint Study of  Action Sheet 28 - RETF Safeguards System

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
4/23/1998	4/23/2001	In Force	Secondary DOE	True	Primary DOE	High Energy Physics	Collaborative program for target development for high power spallation neutron sources
Title:	Specific Mei Program of	morandum of Target Develo	Agreement between poment for High Po	n the Jap wer Spall	an Atomic Energy ation Neutron Soul	Research Institute and the Department of Erces	nergy of the United States of America for Collaborative
Comment:	: Work will be	preformed at t	he Alternating Gradie	ent Synchr	otron facility at Broo	okhaven National Laboratory	
8/3/1978	12/31/1981	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Fast Reactor Physics
Title:	: Memorandu a Joint Phys	m of Underst sics Large Co	anding on Coopera re Critical Experime	tion betweents Prog	een the United Sta ram	tes Department of Energy and the Power Re	eactor and Nuclear Fuel Development Corporation, Japan, in
Comment:	Phase I and	II. Phase III w	ould be a separate N	MOU.			
2/10/1982			Secondary DOE		Primary DOE	Nuclear Energy	Fast Reactor Safety
Title:	: Agreement i	between the L	Department of Energ	gy of the	United States and	the Power Reactor and Nuclear Fuel Develo	pment Corporation of Japan in the Field of LMFBR Safety
Comment:	: Provide for jo	oint developme	ent and validation of	a safety ar	alysis computer co	de	
5/14/1982	12/31/1985	Expired	Secondary DOE		Primary DOE	Nuclear Energy	Fast Reactor Physics
Title:	: Memorandu a Joint Phys	m of Underst sics Large He	anding on Coopera terogeneous Core (	tion betw Critical Ex	een the United Sta periments Progra	tes Department of Energy and the Power Re m	eactor and Nuclear Fuel Development Corporation, Japan, in
Comment:							
6/11/1987	6/11/2001	In Force	Tertiary DOE	True	Secondary DOE	Fusion Energy	Annex 4 - Fusion - Fuel Processing
	Research ar	nd Developme	ent for the DOE-JAE	ERI Collab	orative Program T	echnology for Fusion-Fuel Processing	ates Department of Energy on Cooperation in Fusion
Comment:	<ul> <li>Define, cond power syster energy progr</li> </ul>	ns; developing	he joint operation/ex g/testing environment	periments tal/personr	on fusion fuel techn nel protective syster	iology with TSTA at LANL for the purposes of d ns for tritium handling; developing/testing/qualit	leveloping and demonstrating fuel process technology for fusion fying equipment and material for tritium services in the fusion
	onioig, prog.	urr, ctc.					
5/19/1988	5/19/1993		Tertiary DOE	True	Secondary DOE	Fusion Energy	Annex 5 - Superconducting Polodial Coil Technology (JAERI)
Title:	5/19/1993 : Annex V to and Develop	Terminated the Implement oment for the	ting Arrangement b DOE-JAERI Collab	oetween ti	he Japan Atomic E	<b>3</b> ,	(JAERI) Department of Energy on Cooperation in Fusion Research
Title:	5/19/1993  : Annex V to and Develop  : TAKE PART	Terminated the Implement oment for the IN TEST OF	nting Arrangement I DOE-JAERI Collab JAPANESE COIL	oetween ti orative Pr	ne Japan Atomic E ogram in the Deve	inergy Research Institute (JAERI) and U.S. Diagnostic Color (1997) in the color of Superconducting Poloidal Color (1997).	(JAERI) Department of Energy on Cooperation in Fusion Research Technology
Title: Comment: 5/19/1988	5/19/1993  : Annex V to and Develop  : TAKE PART  5/31/1992	Terminated  the Implement oment for the IN TEST OF Completed	nting Arrangement to DOE-JAERI Collabor JAPANESE COIL Tertiary DOE	petween ti orative Pr True	he Japan Atomic E ogram in the Deve Secondary DOE	inergy Research Institute (JAERI) and U.S. Delay Res	(JAERI) Department of Energy on Cooperation in Fusion Research Fechnology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI)
Title: Comment: 5/19/1988	5/19/1993  : Annex V to and Develop  : TAKE PART 5/31/1992  : Annex VI to Research and Service	Terminated the Implement for the IN TEST OF Completed the Implement of Development	nting Arrangement L DOE-JAERI Collab JAPANESE COIL Tertiary DOE	True	he Japan Atomic E ogram in the Deve Secondary DOE	Energy Research Institute (JAERI) and U.S. Description of Superconducting Poloidal Coil 1  Fusion Energy  Energy Research Institute and the United St	(JAERI) Department of Energy on Cooperation in Fusion Research Fechnology  Annex 6 - MTX Project of FEL Microwave Heating in
Title: Comment: 5/19/1988 Title:	5/19/1993  : Annex V to and Develop  : TAKE PART  5/31/1992  : Annex VI to Research arand Current	Terminated the Implement oment for the IN TEST OF Completed the Implement of Development Drive Applic	nting Arrangement I DOE-JAERI Collab JAPANESE COIL Tertiary DOE nting Arrangement ent for the DOE-JAI	True between ti True between teRI Collab	he Japan Atomic E ogram in the Deve Secondary DOE the Japan Atomic I orative Program in	Energy Research Institute (JAERI) and U.S. Description of Superconducting Poloidal Coil 1  Fusion Energy  Energy Research Institute and the United St	(JAERI) Department of Energy on Cooperation in Fusion Research Fechnology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI)  ates Department of Energy on Cooperation in Fusion
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Title:  Comment: 5/19/1988  Title:  Comment: 1/9/1989	5/19/1993  : Annex V to and Develop:    TAKE PART    5/31/1992  : Annex VI to Research arand Current:    COLLABOR:    1/31/1992  : Annex VII to	Terminated the Implement for the IN TEST OF Completed the Implement Development Development Development Development Development Drive Applic	Ating Arrangement L DOE-JAERI Collaboration JAPANESE COIL Tertiary DOE Inting Arrangement and for the DOE-JAL ations to Magnetic ON MICROWAVE H Tertiary DOE	True between termination to the tween termination term	he Japan Atomic E ogram in the Deve Secondary DOE the Japan Atomic I forative Program in DF PLASMAS Secondary DOE the Japan Atomic	Energy Research Institute (JAERI) and U.S. Elopment of Superconducting Poloidal Coil 1  Fusion Energy  Energy Research Institute and the United Stanthe Microwave Tokamak Experiment (MTX)  Fusion Energy	(JAERI) Department of Energy on Cooperation in Fusion Research Fechnology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System States Department of Energy on Cooperation in Fusion
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Title: Comment: 5/19/1988  Title: Comment: 1/9/1989 Title: Comment: 2/10/1989	5/19/1993  : Annex V to and Develop:     TAKE PART     5/31/1992  : Annex VI to Research and Current:     COLLABOR:     1/31/1992  : Annex VII to Research and Current:     COLLABOR:     1/31/1992	the Implement of the Implement for the Implement of Development Drive Application ATIVE WORK Completed of the Implement of Development of available in Completed	Ating Arrangement to DOE-JAERI Collaboration Arrangement the time of the DOE-JAI ations to Magnetic ON MICROWAVE Fortiary DOE anting Arrangement the to the JAERI-Da History  Tertiary DOE  Tertiary DOE  Tertiary DOE  Tertiary DOE	True between termination to the tween termination term	he Japan Atomic Elegram in the Development of the Japan Atomic International Plants of the Japan Atomic Secondary DOE the Japan Atomic Program of Secondary DOE	Energy Research Institute (JAERI) and U.S. Disposent of Superconducting Poloidal Coil 1  Fusion Energy Energy Research Institute and the United State the Microwave Tokamak Experiment (MTX)  Fusion Energy Energy Research Institute and the United State the New Tube Test with the JT-60 ICRF Synthesion Energy	(JAERI) Department of Energy on Cooperation in Fusion Research Technology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System States Department of Energy on Cooperation in Fusion System  Annex 8 - Test Negative Ion Source Neutral Beam Injectors
Title:  Comment: 5/19/1988  Title:  Comment: 1/9/1989  Title: Comment: 2/10/1989	5/19/1993  : Annex V to and Develop:     TAKE PART     5/31/1992  : Annex VI to Research and Current:     COLLABOR:     1/31/1992  : Annex VII to Research and Current:     2/28/1990  : Annex 8 to 1	the Implement of the Implement for the Implement for the IN TEST OF Completed the Implement Drive Applic ATIVE WORK Completed the Implement of available in Completed the Implement the Implement available in the Implement available in the Implement Implem	Ating Arrangement & DOE-JAERI Collaboration of the DOE-JAERI Collaboration of the DOE-JAERI CON MICROWAVE HATCHISTORY DOE THE TOT THE JAERI-DOE THE JAERI-DO	True between telegraphic foliate False between telegraphic foliate False False False False	Secondary DOE  The Japan Atomic E  The Japan Atomic I  The Japan Atomic I  The Japan Atomic I  The PLASMAS  Secondary DOE  The Japan Atomic  Secondary DOE  The Japan Atomic I	Energy Research Institute (JAERI) and U.S. Disposent of Superconducting Poloidal Coil 1  Fusion Energy Energy Research Institute and the United State the Microwave Tokamak Experiment (MTX)  Fusion Energy Energy Research Institute and the United State the New Tube Test with the JT-60 ICRF Synthesion Energy	(JAERI) Department of Energy on Cooperation in Fusion Research Technology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System States Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 8 - Test Negative Ion Source Neutral Beam Injectors  States Department of Energy on Cooperation in Fusion
Title:  Comment: 5/19/1988  Title:  Comment: 1/9/1989  Title: 2/10/1989  Title:	5/19/1993  : Annex V to and Develop:     TAKE PART     5/31/1992  : Annex VI to Research and Current:     COLLABOR:     1/31/1992  : Annex VII to Research and Current:     2/28/1990  : Annex 8 to 1	the Implement Development available in Completed the Implement Development Development Development available in Completed the Implement Development available in Completed the Implement Development D	Ating Arrangement to DOE-JAERI Collaborations arrangement ent for the DOE-JAI ations to Magnetic ON MICROWAVE HOTTOTIC Tertiary DOE anting Arrangement ent for the JAERI-D History  Tertiary DOE atting Arrangement to the JAERI-D thistory  Tertiary DOE atting Arrangement the thistory DOE atting Arrangement the thistory the DOE-JAI atting Arrangement the thistory the DOE-JAI atting Arrangement the thistory the DOE-JAI atting Arrangement the DOE-JAI atting Arrangeme	True between telegraphic foliate False between telegraphic foliate False False False False	Secondary DOE  The Japan Atomic E  The Japan Atomic I  The Japan Atomic I  The Japan Atomic I  The PLASMAS  Secondary DOE  The Japan Atomic  Secondary DOE  The Japan Atomic I	Energy Research Institute (JAERI) and U.S. Description of Superconducting Poloidal Coil 1  Fusion Energy Energy Research Institute and the United Standard Experiment (MTX)  Fusion Energy Energy Research Institute and the United Standard Experiment (MTX)  Fusion Energy Fusion Energy Fusion Energy Fusion Energy	(JAERI) Department of Energy on Cooperation in Fusion Research Technology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System Department of Energy on Cooperation in Fusion Projectors  Annex 8 - Test Negative Ion Source Neutral Beam Injectors Department of Energy on Cooperation in Fusion
Title: Comment: 5/19/1988     Title: Comment: 1/9/1989     Title: 2/10/1989     Title: Comment: 1/27/2000	5/19/1993  : Annex V to and Develop:     TAKE PART     5/31/1992  : Annex VI to Research and Current:     COLLABOR.     1/31/1992  : Annex VII to Research aid:     Description recommend of the Park S to Research aid:     Description recommend of the Park S to Research aid:     Description recommend of the Park S to Research aid:     Description recommend of the Park S to Research aid:     Description recommend of the Park S to Research aid:     Description recommend of the Park S to Research aid:	the Implement of the Implement for the Implement of the Implement of Development Drive Application of the Implement of Development available in Completed the Implement of Development of Available in In Force	Arrangement to DOE-JAERI Collaborations of Collaborations to Magnetic ON MICROWAVE H. Tertiary DOE Tertiary DOE Tertiary DOE Tertiary DOE Tertiary DOE Tertiary DOE  A History  Tertiary DOE  A History  Tertiary DOE  A History  History  Primary DOE	True between term of the term	Secondary DOE the Japan Atomic E the Japan Atomic I the Japan Atomic I the Japan Atomic I Secondary DOE the Japan Atomic Secondary DOE the Japan Atomic Secondary DOE the Japan Atomic E	Energy Research Institute (JAERI) and U.S. Elopment of Superconducting Poloidal Coil 1  Fusion Energy Energy Research Institute and the United Standard Experiment (MTX)  Fusion Energy Energy Research Institute and the United Standard New Tube Test with the JT-60 ICRF Synthematics of the New Tube Test with the JT-60 ICRF Synthematics of the New Tube Test with the JT-60 ICRF Synthematics of the Testing of a Negative ion Source for New Tube Testing of a Negative ion Source for New	(JAERI) Department of Energy on Cooperation in Fusion Research Technology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion (Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System tates Department of Energy on Cooperation in Fusion stem  Annex 8 - Test Negative Ion Source Neutral Beam Injectors Department of Energy on Cooperation in Fusion Neutral Beam Injectors  DOE/JNC Safeguards Agreement
Title: Comment: 5/19/1988     Title: Comment: 1/9/1989     Title: 2/10/1989     Title: Comment: 1/27/2000	5/19/1993  : Annex V to and Develop:     TAKE PART     5/31/1992  : Annex VI to Research and Current:     COLLABOR.     1/31/1992  : Annex VII to Research ai:     Description r     2/28/1990  : Annex 8 to Research ai:     Description r     1/27/2005	the Implement of Drive Applic ATIVE WORK Completed ATIVE WORK ATIVE WORK Completed ATIVE WORK ATIVE WORK Completed ATIVE WORK AT	Ating Arrangement to DOE-JAERI Collaborations of the DOE-JAI ations to Magnetic ON MICROWAVE HATTER ARRANGEMENT OF THE JAERI-DOE ON MICROWAVE HATTER ARRANGEMENT OF THE JAERI-DOE-JAI HISTORY  Primary DOE DEPARTMENT OF ENERGISCONIC CONTROL OF THE JAERI-DOE DEPARTMENT OF THE JAERI-DOE	True between telegraphic person IEATING (False Detween telegraphic person False False Detween telegraphic person True	secondary DOE  The Japan Atomic E  The Japan Atomic I  The Japan Atomic I  The Japan Atomic I  The PLASMAS  Secondary DOE  The Japan Atomic I  The	Energy Research Institute (JAERI) and U.S. Elopment of Superconducting Poloidal Coil 1  Fusion Energy Energy Research Institute and the United Standard Experiment (MTX)  Fusion Energy Energy Research Institute and the United Standard New Tube Test with the JT-60 ICRF Synthematics of the New Tube Test with the JT-60 ICRF Synthematics of the New Tube Test with the JT-60 ICRF Synthematics of the Testing of a Negative ion Source for New Tube Testing of a Negative ion Source for New	(JAERI) Department of Energy on Cooperation in Fusion Research Technology  Annex 6 - MTX Project of FEL Microwave Heating in MFE (JAERI) Department of Energy on Cooperation in Fusion Project of Free Electron Laser (FEL) Microwave Heating  Annex 7 - Tube Test w/JT-60 ICRF System States Department of Energy on Cooperation in Fusion Project or Service Institute For Cooperation in Fusion States Department of Energy on Cooperation in Fusion States Department Institute For Cooperation in Research and

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:		et 44 between essing Metho				re (JN) and The United States Department of E	nergy (DOE) for A Joint Study of Safeguards Systems for
Comment:							
1/27/2000	1/27/2003	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 45 Remote Monitoring System at PFPF
Title:	Action Shee Monitoring	et 45 between System at the	The United States I Plutonium Fuel Pro	Departme oduction l	nt of Energy (DOE, Facility in Japan	and The Japan Nuclear Cycle Development I	nstitute (JNC) for Development of the Integrated Remote
Comment:							
7/27/1999	3/31/1999	Completed	Tertiary DOE	True	Secondary DOE	Arms Control and Nonproliferation	Action Sheet 14 - Design of a Clean Chemistry Laboraotry
	Contruction		the United States E Clean Chemistry L			and the japan Atomic Energy Research Instit	ute (JAERI) for Basic Design, Final Design, and
Comment:							<del></del>
7/10/2002	7/10/2005	In Force	Primary DOE	True		Civilian Radioactive Waste Management	Nuclear Waste Management Organization Agreement (NUMO)
Title:	Agreement i Managemen		Department of Energ	gy of the	United States of A	merica and the Nuclear Waste Management O	rganization of Japan in the Field of Radioactive Waste
Comment:							
6/10/2004	6/10/2009	In Force	Secondary DOE	True		Nuclear Energy	Annex - 1 bet. DOE and ANRE of Japan
Title:						Energy of the United States of America and the On advanced Nuclear Technologies	Agency of Natural Resources and Energy of Japan
Comment:		•					
Comment: 8/20/2004	8/20/2009	In Force	Primary DOE	True		Science and Technology	
8/20/2004	8/20/2009	In Force	Primary DOE		Atomic Energy Res	Science and Technology	nent of Energy on Cooperation in Doublet III Project
8/20/2004	8/20/2009 Amendment	In Force	Primary DOE		Atomic Energy Res	Science and Technology	ent of Energy on Cooperation in Doublet III Project
8/20/2004 Title:	8/20/2009 Amendment	In Force	Primary DOE		Atomic Energy Res	Science and Technology	nent of Energy on Cooperation in Doublet III Project  Amendment No. 3 to Annex IX
8/20/2004 Title: Comment: 1/11/2005	8/20/2009  Amendment  9/30/2005  Amendment	In Force In Force In Force	Primary DOE reement between th edit test  Annex IX to the Imp	e Japan A True	g Arrangement bet	Science and Technology search Institute and the United States Department Fusion Energy	
8/20/2004 Title: Comment: 1/11/2005	8/20/2009  Amendment  9/30/2005  Amendment Cooperation	In Force In Force In Force	Primary DOE reement between th edit test  Annex IX to the Imp	e Japan A True	g Arrangement bet	Science and Technology search Institute and the United States Departm Fusion Energy tween the United States Department of Energy	Amendment No. 3 to Annex IX
8/20/2004 Title: Comment: 1/11/2005 Title:	8/20/2009  Amendment  9/30/2005  Amendment Cooperation	In Force In Force In Force	Primary DOE reement between th edit test  Annex IX to the Imp	e Japan A True	g Arrangement bet	Science and Technology search Institute and the United States Departm Fusion Energy tween the United States Department of Energy	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and
8/20/2004	8/20/2009  Amendment  9/30/2005  Amendment Cooperation  7/19/2007	In Force In Force In Force In Force In Fusion Re	Primary DOE reement between th edit test  Annex IX to the Impesearch and Develo	True  Jementing	g Arrangement bet r the DOE-JAERI C	Science and Technology  search Institute and the United States Departm  Fusion Energy  tween the United States Department of Energy  Collaborative Program on the Data Link  Fusion Energy	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development
8/20/2004	8/20/2009  Amendment  9/30/2005  Amendment  Cooperation  7/19/2007  Amendment	In Force In Force In Force In Force In Fusion Re	Primary DOE reement between th edit test  Annex IX to the Impesearch and Develo	True  Jementing	g Arrangement bet r the DOE-JAERI C	Science and Technology search Institute and the United States Departm Fusion Energy tween the United States Department of Energy Collaborative Program on the Data Link	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development
8/20/2004	8/20/2009  Amendment  9/30/2005  Amendment  Cooperation  7/19/2007  Amendment	In Force In Force In Force In Force In Force In Force	Primary DOE reement between th edit test  Annex IX to the Impesearch and Develo	True  Jementing pment for  True	g Arrangement bet r the DOE-JAERI C	Science and Technology  search Institute and the United States Departm  Fusion Energy  tween the United States Department of Energy  Collaborative Program on the Data Link  Fusion Energy	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development  pment  FY 93 Scope of Work for Development of Fundamenta
8/20/2004	8/20/2009  Amendment 9/30/2005  Amendment Cooperation 7/19/2007  Amendment 7/28/1994	In Force In Completed	Primary DOE  reement between the  edit test  Annex IX to the Impesearch and Develop  Secondary DOE  to the DOE - Monbo	True  Ilementing pment for  True  Isho Exch	g Arrangement bet the DOE-JAERI C Primary DOE hange of Letters of Secondary DOE	Science and Technology  search Institute and the United States Department  Fusion Energy  tween the United States Department of Energy  Collaborative Program on the Data Link  Fusion Energy  The Cooperation in Fusion Research and Develo	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development  pment  FY 93 Scope of Work for Development of Fundamenta Thermodynamic and Adsorption Data
8/20/2004	8/20/2009  Amendment 9/30/2005  Amendment Cooperation 7/19/2007  Amendment 7/28/1994  Joint Staten	In Force In Completed	Primary DOE  reement between the  edit test  Annex IX to the Impesearch and Develop  Secondary DOE  to the DOE - Monbo	True  Ilementing pment for  True  Isho Exch	g Arrangement bet the DOE-JAERI C Primary DOE hange of Letters of Secondary DOE	Science and Technology  search Institute and the United States Departm  Fusion Energy  tween the United States Department of Energy  Collaborative Program on the Data Link  Fusion Energy  In Cooperation in Fusion Research and Develo	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development  pment  FY 93 Scope of Work for Development of Fundamenta Thermodynamic and Adsorption Data
8/20/2004	8/20/2009  Amendment 9/30/2005  Amendment Cooperation 7/19/2007  Amendment 7/28/1994  Joint Staten	In Force In Force In Force In Force In Force In Force Completed	Primary DOE  reement between the  edit test  Annex IX to the Impesearch and Develop  Secondary DOE  to the DOE - Monbo	True  Ilementing pment for  True  Isho Exch	g Arrangement bet the DOE-JAERI C Primary DOE hange of Letters of Secondary DOE	Science and Technology  search Institute and the United States Department  Fusion Energy  tween the United States Department of Energy  Collaborative Program on the Data Link  Fusion Energy  The Cooperation in Fusion Research and Develo	Amendment No. 3 to Annex IX  and the Japan Atomic Energy Research Institute on  Amedment 4 - Annex 1 Fusion Research and Development  pment  FY 93 Scope of Work for Development of Fundamenta Thermodynamic and Adsorption Data

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
4/30/1996	3/31/1997	Completed	Tertiary DOE	False	Secondary DOE	Civilian Radioactive Waste Management	FY 96 Scope of Work for Development of Fundamenta Thermodynamic and Adsorption Data
Title:	Attachment	to Joint Work	Statement for the	Annex to	the PNC-DOE Agr	reement: Development of Fundamental Thermo	odynamic and Adsorption Data FY 1996 Scope of Work
Comment:							
4/1/1984	12/31/1984	Completed	Tertiary DOE	False	Secondary DOE	Nuclear Energy	Equipment Loan Agreement
Title:	Equipment L Systems Tec	oan Agreeme chnology Tes	ent between Martin t Program at the Oa	Marietta l ak Ridge l	Energy Systems, I National Laborato	inc. and the Power Reactor and Nuclear Fuel D ry	evelopment Corporation of Japan Incident to a Remote
Comment:	Effective as le	ong as the Rer	mote Systems Techr	nology Tes	t Program		
11/8/1983	3/31/2004	In Force	Tertiary DOE	True	Secondary DOE	Fusion Energy	Annex 1 - First Wall and Blanket Structural Materials
	U.SJapan (	Collaborative	Testing of First Wa	II and Bla	nket Structural Ma	Research Institute and U.S. Department of Ener aterials with Mixed Spectrum Fission Reactors	rgy on Cooperation in Fusion Research and Developmen
Comment:	JOINT IRRAI	DIATION EXP	ERIMENTS AND EV	ALUATIO	N OF RESULTS.		
10/9/1984	10/23/1993	•	Tertiary DOE		Secondary DOE	Fusion Energy	Annex 2 - Fusion - Blanket Neutronics
	Research an	id Developme	ent JAERI-DOE Co	ollaboratio	on on Fusion Blan	gy Research Institute (JAERI) and United State ket Neutronics	es Department of Energy (DOE) on Cooperation in Fusion
Comment:	JOINT EXPE	RIMENTS ON	ADVANCED BLANI	KET MOD	ULES		<del></del>
11/10/1986	11/10/1990	Expired	Tertiary DOE	False	Secondary DOE	Fusion Energy	Annex 3 - Fuel Cleanup System at TST
Title:	Annex III to a Research an Assembly	the Implemen ad Developme	ting Arrangement I ent for the DOE-JAE	etween t RI Collab	he Japan Atomic I orative Program i	Energy Research Institute and the United State in Development of Improved Components for th	s Department of Energy on Cooperation in Fusion he Fuel Cleanup System of the Tritium Systems Test
Comment:	Test at TSTA components	two process-r	eady components, to anup system which we	he palladit would be a	ım diffuser, and the	e ceramic electrolysis cell, designed and manufacti axt generation of fission experimental devices.	ured by JAERI for the purpose of developing improved
7/17/1998	7/17/2000	In Force	Secondary DOE	True		Civilian Radioactive Waste Management	Project Annex on Engineered Barriers
Title:	of Energy of	ex for Cooper the United St	ation in Near-Field tates of America an	Performa nd the Pov	nce and Analyses ver Reactor and N	on the Long-Term Behavior of the Engineered luclear Fuel Development Corporation Japan in	I Barriers under the Agreement between the Department on the Area of Radioactive Waste Management
2/14/1997		Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 11 - Clean Lab Project (JAERI)
Title:	Action Shee Coordination	t 11 between n Group to Ov	The United States I versee the Clean La	Departme boratory	nt of Energy (DOE Project of JAERI (	e) and The Japan Atomic Energy Research Inst for Environment Sample Analysis	itute (JAERI) for Establishment of a Planning and
Comment:							
2/24/1997	2/24/1999	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 31 - Improvement of Dual Safeguards System (PNC)
Title:	Action Shee Safeguards	t 31 between System at Mo	The Department of nju EVST	Energy (L	OOE) for and The i	Power Reactor and Nuclear Fuel Development	Corporation of Japan (PNC) for Improvement of Dual
Comment:					···-		
12/8/1997	12/8/1999	•	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 32 - Automated Controlled-Potential Coulometer
Title:	Action Shee Controlled-P	t 32 between Potential Coul	the Power Reactor ometer	and Nucl	ear Fuel Developn	nent Corporation of Japan (PNC) and the United	d States Department of Energy (DOE) for Automated
Comment:							
3/18/1998	3/31/2000	•	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 33 - Remote Monitoring System
Title:	Action Shee Nonprolifera	t 33 between : tion	the Japan Nuclear	Cycle Dev	relopment Institut	e (JNC) and the United States Department of E	nergy (DOE) for Remote Monitoring Systems for Nuclea
Comment:							
3/2/1998	3/2/2000	Completed	Secondary DOE	False	Primary DOE	Arms Control and Nonproliferation	Action Sheet 34 - Remote Monitoring and Transparency

Title:		<u> </u>		Binding			<u> </u>
	Action Shee Exchange or	t 34 between n Remote Mo	the Power Reactor nitoring and Trans	and Nucl parency	ear Fuel Develop	ment Corporation of Japan (PNC) and the U	United States Department of Energy (DOE) for Personnel
Comment:		·	<del>- ·</del>				
2/19/1998	2/19/2000	•	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 35 - NDA at Ningyo Plant
Title:	Action Shee Study of ND	t 35 between A Technique	the Power Reactor for Holdup Measur	and Nucle ements at	ear Fuel Develop Ningyo Enrichm	ment Corporation of Japan (PNC) and the Usents Plant (Phase-I)	United States Department of Energy (DOE) for Feasibility
Comment:					•		
3/13/1998	10/13/1998		Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 36 - MAGB at PFPF (Phase-I)
	Design of Pl	t 36 between utonium Isote	the Power Reactor opic Measurements	and Nucles for Conta	ear Fuel Develop ainers in Advanc	ment Corporation Japan (PNC) and the Uni ed MAGB at PFPF (Phase-I)	ited States Department of Energy (DOE) for Conceptual
Comment:							
12/18/1998	12/18/2001	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 37 - A-MAGB at Plutonium Fuel Production Facility
	Systems for	t 37 between Measuring C	the United States E ontainers in the Ad	Departmer Ivanced M	nt of Energy (DOL laterial Accounta	E) and the Japan Nuclear Cycle Developme ncy Glove Box at PFPF	nt Institute (JNC) for Development of Plutonium Isotopic
Comment:			· · · · · · · · · · · · · · · · · · ·			7-1-1	
12/18/1998	12/18/2001	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 38 - Remote Monitoring for Tokai
	Tokai Vitrific	t 38 between ation Facility	the United States E Safeguards Syste	Departmer m	nt of Energy (DOE	E) and the Japan Nuclear Cycle Developme	nt Institute (JNC) for Development of Remote Monitoring for
Comment:							
3/12/1999	3/12/2002	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 39 - Radiation Sensor Monitors at Monju
	Monitors to	t 39 between Improve Duai	The United States ( C/S at Monju Read	Departme tor Core	nt of Energy (DO	E) and The Japan Nuclear Cycle Developm	ent Institute (JNC) for Development of Radiation Sensor
Comment:							
3/22/1999	3/22/2002	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 40 - Isotope Dilution Gamma-Ray Spectrometry
	Study of the	t (40) betwee Metrology of	n The United States the Isotope Dilutio	s Departm on Gamma	ent of Energy (De -Ray Spectromet	OE) and The Japan Nuclear Cycle Developr try (IDGS)	nent Institute (JNC) for Joint Research and Development
Comment:							
3/24/1999	9/24/2000	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 41 Conceptual Design for RETF Safeguards System Phase 2.
	for the RETF	t 41 between Safeguards	The Japan Nuclear System (Phase-2)	Cycle De	velopment Institu	ute (JNC) And The United States Departmer	nt of Energy (DOE) For Joint Study on the Conceptual Design
Comment:							
1/27/2000	1/27/2003	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 43 NDA Techniques at Ningyo
Title:	Action Shee NDA Technic	t 43 between ques for In-Pi	The United States I rocess and Waste I	Departme nvention a	nt of Energy (DO at the Ningyo Enr	E) and The Japan Nuclear Cycle Developm richment Plant	ent Institute (JNC) for Design Studies and Development of
Comment:							
6/9/1997	6/9/2007	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA - Safeguards
Title:	Specific Mer Research an	norandum of d Developme	Agreement Betweent in Nuclear Mate	en the Jap rial Contro	an Atomic Energ ol, Accountancy,	ly Research Institute and the Department of Verification and Physical Protection	f Energy of the United States of America Concerning
Comment:							
6/9/1997	6/9/1999	•	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	SMA - Communications Link  Japan Atomic energy Research Institute for a Collaborative

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All Bilater	al Agreeme	ents					
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
2/19/1997	5/19/2000	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 30 - Randomized Inspection (PNC)
Title:	Action Shee Improved Sa	t PNC 30 The afeguards Me	United States Depa thodology Using No	rtment of on-Notice	Energy (DOE) and Randomized Inspe	The Power Reactor and Nuclear Fuel Developmer ction	nt Corporation of Japan (PNC) for Joint Study of
Comment:							
5/12/1992	5/12/1997	Renegotiatin g	Primary DOE	False	Intergovernmental	Human Genome Analysis	Human Genome Analysis
Title:	Implementin Energy of th	ng Arrangeme ne United Stat	ent between the Sciences of America on Co	ence and operation	Technology Agenc n regarding the gei	y of Japan and the National Institutes of health of nome data Base (GDB) Project in Support of the H	the United States of America and the Department of uman Genome Analysis
Comment:							
8/22/2000	8/22/2005	In Force	Primary DOE	True		Nuclear Energy	Agreement for Nuclear Technologies
Title: Comment:		Between The	Department of Ener	gy of the	United States of A	merica and The Japan Nuclear Cycle Development	ts Institute in the Field of Nuclear Technologies.
5/25/2004	5/25/2009	In Force	Primary DOE	True		Nuclear Energy	Arrangement bet. DOE and ANRE of Japan
Title:	Implementin Cooperation	ng Arrangeme in the Joint	ent between the Dep Nuclear Energy Res	artment o earch Init	of Energy of the United	ited States of America and the Agency of Natural I	Resources and Energy of Japan Concerning
Comment:							
3/19/2003	3/19/2008	In Force	Primary DOE	True		Civilian Radioactive Waste Management	Radioactive Waste Management
Title:	Agreement l Managemen	between the L t	Department of Energ	y of the U	Inited States of An	nerica and the Japan Nuclear Cycle Development I	Institute in the Field of Radioactive Waste
Comment:					1=4:···		
8/18/2000	8/18/2005	Completed		True		Fusion Energy	Amendment V to the Agreement bet. JAERI and DOE
Title:	Amendment	V to the Agre	eement Between the	Japan A	tomic Energy Rese	arch Institute and the United States Department o	f Energy on Cooperation in Doublet III Project
Comment:							
8/18/2000	8/18/2005	In Force	edit test	True		Fusion Energy	Amendment V
Title:	Amendment	V to the Agre	eement between the	Japan At	tomic Energy Rese	arch Institute and the United States Department of	f Energy on Cooperation in Doublet III Project
Comment:							
1/8/2004	1/8/2008	In Force	Statement of Intent	False		Science and Technology	Joint SOI bet. DOE and the Ministry of Economy, Trade and Industry of Japan
Title:	Joint Statem and Technol	ent of Intent logical Coope	between the Ministreration in the Area o	y of Econ f Hydroge	omy, Trade and In en and Fuel Cells	dustry of Japan and the Department of Energy of t	the United States of America concerning Scientific
Comment:							
11/5/2001	11/5/2003	In Force	Primary DOE	True			Specific MOU bet. JAERI and DOE
	Specific Mer	norandum of	•	n the Jap	an Atomic Energy l leutron Source	Research Institute and the Department of Energy o	of the United States of America for Collaboration on
Comment:							
3/29/2004	3/29/2009	In Force	Secondary DOE	True			Amendment IV of Annex I

Title: Amendment IV to the Annex I to the Implementing Arrangement between the United States Department of Energy and the Japan Atomic Energy Research Institute on Cooperation in Fusion Research and Development U.S./Japan Collaborative Testing of First Wall and Blanket Structural Materials with Mixed Spectrum Fission Reactors

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:							
3/31/1988	9/30/1998	Expired	Primary DOE	True		Arms Control and Nonproliferation	R&D Nuclear Mat Control & Accounting for Safeguard
Title:	Agreement bedevelopmen	etween Powe t concerning	er Reactor and Nuc nuclear material co	lear Fuel ontrol and	Development Cor accountability m	poration (PNC) of Japan and the U.S. Depai leasures for safeguards	rtment of Energy for cooperation in research and
Comment:	PERMANEN	T COORDINA	TING GROUP MEET	TING, OCT	TOBER 1991		
5/22/1987	9/30/1990	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 4 - Graphite Materials Development Testing
Title:	Annex to the Development	Implementing tin the area	ng Arrangement bet of High Temperatur	ween the e Gas-Co	United States De oled Reactors. A	partment o Energy and the Japan Atomic E nnex 4. collaborative Program for Metals D	inergy Research Institute on Cooperation in Research and Development and Testing
Comment:	EXCHANGE	OF HTGR ME	TALS TECHNOLOG	Y DATA			
1/22/1985	12/31/1988	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	LMFBR Database & Database Management System
Title:						ment of Energy and the Power Reactor and Component Reliability Data Base and Data	Nuclear Fuel Development Corporation of Japan in the are Base Management System
Comment: 3/14/1983	12/31/1987	Expired	Secondary DOE	False	Primary DOE	High Energy Physics	Neutron Scattering - JAERI
			•		•	• • •	on in Research in the Area of Neutron Scattering
						eutron Scattering remains in force	m in research in the Area of Neutron Courtering
2/24/1997	2/24/2000		Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 26 - NDA for Leached Hulls
Title: Comment:			The Department of stem for Leached F		DOE) for and The	Power Reactor and Nuclear Fuel Developm	ent Corporation of Japan (PNC) for Joint Development of a
					Primary DOE	Power Reactor and Nuclear Fuel Developm  Arms Control and Nonproliferation	ent Corporation of Japan (PNC) for Joint Development of a  Action Sheet 42 Measurement Methods for Scrap Materials
Comment: 1/27/2000 Title:	7/27/2001  Action Shee	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	
Comment: 1/27/2000 Title: Comment:	7/27/2001  Action Shee	In Force	Secondary DOE  The Japan Nuclear	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title:	7/27/2001 Action Shee Methods for 1/19/2010	In Force t 42 between Scrap Materi	Secondary DOE  The Japan Nuclear ials with High Imput  Primary DOE	True  Cycle Derities  True	Primary DOE  velopment Institu	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Feducation, Culture, Sports, Science and Technology of
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title: Comment:	7/27/2001 Action Shee Methods for 1/19/2010 Implementin Japan conce	In Force t 42 between Scrap Materi In Force ag Arrangemeering Coope	Secondary DOE  The Japan Nuclear lals with High Imput  Primary DOE  ent between the Deparation in the Field of	True  Cycle Derities  True  partment of Researce	Primary DOE  velopment Institu	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of lent of Innovative Nuclear Energy Technolog	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Education, Culture, Sports, Science and Technology of gies
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title: Comment: 5/1/2005	7/27/2001  Action Shee Methods for 1/19/2010  Implementin Japan conce 10/1/2005  Protocol Ext	In Force	Secondary DOE  The Japan Nuclear lals with High Imput  Primary DOE  ant between the Deparation in the Field of Extension greement between	True  Cycle Derities  True  partment of Researce	Primary DOE  velopment Institu  of Energy of the Lethand Development	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of ent of Innovative Nuclear Energy Technolog  Energy Research and Development	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Feducation, Culture, Sports, Science and Technology of
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title: Comment: 5/1/2005 Title:	7/27/2001  Action Shee Methods for 1/19/2010  Implementin Japan conce 10/1/2005  Protocol Ext	In Force	Secondary DOE  The Japan Nuclear lals with High Imput  Primary DOE  ant between the Deparation in the Field of Extension greement between	True  Cycle Derities  True  partment of Researce	Primary DOE  velopment Institu  of Energy of the Lethand Development	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of ent of Innovative Nuclear Energy Technolog  Energy Research and Development	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Feducation, Culture, Sports, Science and Technology of gies  Extending agreement bet. US and Japan
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title: Comment: 5/1/2005	7/27/2001  Action Shee Methods for 1/19/2010  Implementin Japan conce 10/1/2005  Protocol Ext	In Force	Secondary DOE  The Japan Nuclear lals with High Imput  Primary DOE  ant between the Deparation in the Field of Extension greement between	True  Cycle Derities  True  partment of Researce	Primary DOE  velopment Institu  of Energy of the Lethand Development	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of ent of Innovative Nuclear Energy Technolog  Energy Research and Development	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Feducation, Culture, Sports, Science and Technology of gies  Extending agreement bet. US and Japan
Comment: 1/27/2000	7/27/2001 Action Shee Methods for 1/19/2010 Implementin Japan concert 10/1/2005 Protocol Extenergy and 7/6/2009 Extension o Decontamin	In Force	Secondary DOE  The Japan Nuclear lals with High Imput  Primary DOE  ent between the Deparation in the Field of Extension greement between is	True Cycle Derities True Dartment of Research True True True	Primary DOE  velopment Institu  of Energy of the University of the University of the University of the University of the Departs	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of lent of Innovative Nuclear Energy Technolog  Energy Research and Development lited States of America and the Government  Environmental Management	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Education, Culture, Sports, Science and Technology of gies  Extending agreement bet. US and Japan of Japan on Cooperation in Research and Development in
Comment: 1/27/2000 Title: Comment: 1/19/2005 Title: Comment: 5/1/2005 Title: Comment: 7/6/2004	7/27/2001 Action Shee Methods for 1/19/2010 Implementin Japan concert 10/1/2005 Protocol Extenergy and 7/6/2009 Extension o Decontamin	In Force	Secondary DOE  The Japan Nuclear ials with High Imput  Primary DOE  ent between the Departion in the Field of Extension greement between is  Extension  morandum of Agree	True Cycle Derities True Dartment of Research True True True	Primary DOE  velopment Institu  of Energy of the University of the University of the University of the University of the Departs	Arms Control and Nonproliferation  Ite (JNC) and The United States Department  Nuclear Energy  United States of America and the Ministry of lent of Innovative Nuclear Energy Technolog  Energy Research and Development lited States of America and the Government  Environmental Management	Action Sheet 42 Measurement Methods for Scrap Materials  t of Energy (DOE) For Investigation of Measurements  Implementing Arrangement bet. DOE and (MEXT)of Japan  Education, Culture, Sports, Science and Technology of gies  Extending agreement bet. US and Japan of Japan on Cooperation in Research and Development in  Extension - MOA bet. DOE and JAERI

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Country:	Kazakhsta	n	-				
7/12/1996		In Force	Primary DOE	True		Science and Technology	Energy R&D and Tech exchange
	Research ar		Department of Energent and Technology			nerica and the Ministry of Science-Academy o	f Sciences of the Republic of Kazakhstan on Scientific
Comment							
12/19/2000		In Force	Primary DOE	True		Arms Control and Nonproliferation	Decommissioning of the BN-350 Reactor
	Concerning		ont between the Dep oning of the BN-350		of Energy of the Un	ited States of America and the Ministry of Ene	rgy, Industry and trade of the Republic of Kazakhstan
Comment	<u> </u>	I E	0	<b></b>	D-i DOE	Daniel Occasion	D
5/13/1997		In Force	Secondary DOE		Primary DOE	Remote Sensing	Remote Sensing Mission
Comment		or the Conauc	t of the Remote Se	nsing Mis	ision (AMPS) in the	Republic of Kazakhstan	
country:	Korea, Rep	ublic of					
7/28/1993	1/29/1999	Renegotiatin a	Intergovernmental	True		Science and Technology	Science & Technology
Title	Agreement	Relating to Sc	cientific and Techni	cal Coope	eration between the	Government of the United States of America	and the Government of the Republic of Korea
Comment							6. Government agencies to cooperate in their respective ow for renegotiations of the IPR section (annex I)
6/14/1996	6/14/2001	In Force	Primary DOE	True		Nuclear Energy	Cooperative Laboratory Relationship
Title		m of Understa Laboratory R		Departm	ent of Energy of th	e United States of America and the Ministry of	f Science and Technology of the Republic of Korea for
Comment	: Cooperate in	the field of pe	•				and environment; nuclear safeguards technology; basic
6/14/1996	6/14/2001	In Force	Primary DOE	True	Intergovernmental	Fusion Energy	Fusion Energy Research and Related Fields
Title			ent between the Dep of Fusion Energy Re			ited States of America and the Ministry of Sci	ence and Technology of the Republic of Korea for
Comment	: Promote S& occurs first.	Γ cooperation i	in fusion energy rese	arch and	related fields in order	r to enhance contributions. Remains in force for t	5 years or until termination of the S&T Agreement, whichev
11/6/1981	11/6/1991	Completed	Primary DOE	True		Fossil Energy	Coal R&D
Title	Relationship						Technology Providing for a Cooperative Laboratory y and Resources and the Korea Advanced Institute of
		•					
Comment	: Exchange of	technical infor	mation, visits & assig	ınments 8	technical consultation	ons	
11/6/1981	11/6/1991	Completed	Primary DOE	True		Energy Efficiency and Renewable Energy	Conservation
11/6/1981	11/6/1991 : <b>Memorandu</b>	Completed m of Understa	Primary DOE  anding between the	True United S	States Department o	Energy Efficiency and Renewable Energy	
11/6/1981	11/6/1991 : Memorandu Relationshi	Completed m of Understa	Primary DOE  anding between the	True United S	States Department o	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science	
11/6/1981 Title Comment	11/6/1991 : <b>Memorandu</b> Relationshi	Completed m of Understa	Primary DOE  anding between the	True United S	States Department o	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science	Conservation  and Technology Providing for a Cooperative Laborator  NuclearSister Labs
11/6/1981 Title Comment 12/18/1979	11/6/1991 : Memorandu Relationshij : 12/31/1984 : Memorandu	Completed on of Understa o between Arg  Expired on of Understa	Primary DOE anding between the gonne National Lab Primary DOE	True United Soratory a True U.S. Dep	States Department on the Korean Institution of Energy	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science of tute of Energy Resources  Nuclear Energy and the Ministry of Science, Republic of Kore	and Technology Providing for a Cooperative Laborato
11/6/1981 Title Comment 12/18/1979 Title	11/6/1991 : Memorandu Relationshi : 12/31/1984 : Memorandu among Argo	Completed on of Understa o between Arg  Expired on of Understa	Primary DOE anding between the gonne National Lab  Primary DOE anding between the	True United Soratory a True U.S. Dep	States Department on the Korean Institution of Energy	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science of tute of Energy Resources  Nuclear Energy and the Ministry of Science, Republic of Kore	and Technology Providing for a Cooperative Laborator  NuclearSister Labs a providing for a cooperative Laboratory Relationship
11/6/1981 Title Comment 12/18/1979 Title Comment 10/25/1994	11/6/1991 : Memorandu Relationshij : 12/31/1984 : Memorandu among Argo : 10/25/1999	Completed on of Understa o between Arg  Expired on of Understa onne National	Primary DOE anding between the gonne National Lab  Primary DOE anding between the Laboratory, the Ko	True United Spratory and True U.S. Depresen Adv	States Department of the Korean Insti- partment of Energy anced Energy Rese	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science of tute of Energy Resources  Nuclear Energy and the Ministry of Science, Republic of Korearch Institute  Energy Efficiency and Renewable Energy	NuclearSister Labs  a providing for a Cooperative Laborato  Relationship  Solar Energy Technology
11/6/1981 Title Comment 12/18/1979 Title Comment 10/25/1994	11/6/1991 : Memorandu Relationshij : 12/31/1984 : Memorandu among Argo : 10/25/1999	Completed on of Understa o between Arg  Expired on of Understa onne National	Primary DOE anding between the gonne National Lab  Primary DOE anding between the Laboratory, the Ko	True United Spratory and True U.S. Depresen Adv	States Department of the Korean Insti- partment of Energy anced Energy Rese	Energy Efficiency and Renewable Energy of Energy and the Korean Ministry of Science of tute of Energy Resources  Nuclear Energy and the Ministry of Science, Republic of Korearch Institute  Energy Efficiency and Renewable Energy	and Technology Providing for a Cooperative Laborato  NuclearSister Labs a providing for a cooperative Laboratory Relationship

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
11/7/1995	11/7/1998	Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 1 - Safeguards System for DUPIC - MOST
Title:			The U.S. Department nentation of a Safeg			inistry of Science and Technology (MOST) of	the Republic of Korea for Cooperation on the
Comment:							
9/17/2002	9/17/2007	In Force	Primary DOE	True		Science and Technology	Safeguards Agreement
Title:	and Develop		ear Material Contro				nology of the Republic of Korea Concerning Research ent and Surveillance Technologies for International
Comment:							
11/6/1981	11/6/1991	Completed	Primary DOE	True		Energy Efficiency and Renewable Energy	Solar Energy
Title:	Relationship					f Energy and the Korean Ministry of Science a rch Institute and the Korea Institute of Energy	nd Technology providing for a Cooperative Laboratory and Resources
10/25/1994	10/25/1999	Expired	Primary DOE	True	Intergovernmental	Energy Research and Development	Conservation
Title:					•	ited States of America and the Ministry of Scie	ence and Technology of the Republic of Korea for
Comment:	Remains in fe	orce for 5 year	s or until termination	of the S&	T Agreement, which	ever occurs first. No activities underway.	
6/13/1994	6/13/1999	Completed	Secondary DOE	True	Primary DOE	Fossil Energy	Annex I - Cooperative Institutional Relationship
Title:	: Annex I to li Technology		Arrangement No. 2	between i	Pittsburgh Energy	Technology Center and Korea Institute of Ene	rgy Research and Korea Institute of Science and
Comment:	Remains in fo	orce for 5 year	s or until termination	of the S&	T Agreement, which	ever occurs first.	
11/7/1997	11/7/1999	Expired	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 3 - Low Background Gamma Spectrometry
	Background	et # 3 Safegua I Gamma Spe		ween Unit	ed States of Americ	ca Department of Energy and Republic of Kore	ea - Ministry of Science and Technology Low
Comment:	Background	l Gamma Špe	ctrometry				
Comment: 11/7/1995	### Background ### 11/7/1997	Gamma Špe Completed	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection
Comment: 11/7/1995 Title:	Background  11/7/1997  Action Shee Developmen	Completed	Secondary DOE	True t of Energ	Primary DOE	Arms Control and Nonproliferation	Action Sheet 2 - Human Resource Development for
Comment: 11/7/1995 Title: Comment:	Background : 11/7/1997 : Action Shee Developmen	Completed of 2 between 1 nt of Human F	Secondary DOE  The U.S. Department Resource for Nuclei	True t of Energ er Safegua	Primary DOE ny (DOE) and The M ards Inspection	Arms Control and Nonproliferation inistry of Science and Technology (MOST) of	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection the Republic of Korea for Joint Collaboration on
Comment: 11/7/1995 Title: Comment: 6/13/1994	Background: 11/7/1997 Action Shee Developmen: 6/13/1999	Completed at 2 between 1 to f Human F	Secondary DOE The U.S. Department Resource for Nuclei Primary DOE	True t of Energ r Safegua	Primary DOE  BY (DOE) and The Mards Inspection  Intergovernmental	Arms Control and Nonproliferation inistry of Science and Technology (MOST) of Fossil Energy	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection the Republic of Korea for Joint Collaboration on Fossil Energy Technology
Comment: 11/7/1995 Title: Comment: 6/13/1994	Background  11/7/1997  Action Shee Development  6/13/1999 Implementin Cooperative	Completed at 2 between 1 at of Human F  Completed ag Arrangemes Laboratory F	Secondary DOE The U.S. Department Resource for Nuclea Primary DOE ant No. 2 Between t	True  t of Energ r Safegua  True he Departs he Pittsbi	Primary DOE  TY (DOE) and The Mards Inspection  Intergovernmental ment of Energy of the second secon	Arms Control and Nonproliferation inistry of Science and Technology (MOST) of Fossil Energy he United States of America and the Ministry	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection the Republic of Korea for Joint Collaboration on Fossil Energy Technology of Science and Technology of the Republic of Korea for
Comment: 11/7/1995 Title: Comment: 6/13/1994 Title:	Background  11/7/1997  Action Shee Development  6/13/1999  Implementin Cooperative and Techno Promote tech	Completed at 2 between 1 at of Human F  Completed ag Arrangemes Laboratory F Laboratory In the Airnological and	Secondary DOE The U.S. Department Resource for Nuclea Primary DOE ant No. 2 Between the Relations between the great of Fossil Energy	True  t of Energy r Safegua  True the Departs the Pittsbu	Primary DOE  If (DOE) and The Mards Inspection  Intergovernmental ment of Energy of the surgh Energy Technologe and to coal technologe.	Arms Control and Nonproliferation inistry of Science and Technology (MOST) of Fossil Energy he United States of America and the Ministry of Science and the Korea Institute of Energy	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection the Republic of Korea for Joint Collaboration on Fossil Energy Technology of Science and Technology of the Republic of Korea for
Comment: 11/7/1995 Title: Comment: 6/13/1994 Title:	Background  11/7/1997  Action Shee Development  6/13/1999  Implementin Cooperative and Techno Promote tech	Completed at 2 between 1 at of Human F  Completed ag Arrangemes Laboratory F Laboratory In the Airnological and	Secondary DOE The U.S. Department Resource for Nuclea Primary DOE ant No. 2 Between the Relations between the rea of Fossil Energy economic cooperations.	True  t of Energy r Safegua  True the Departs the Pittsbu	Primary DOE  If (DOE) and The Mards Inspection  Intergovernmental ment of Energy of the large Technologe and the control of coal technologe.	Arms Control and Nonproliferation inistry of Science and Technology (MOST) of Fossil Energy he United States of America and the Ministry of Science and the Korea Institute of Energy	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection  the Republic of Korea for Joint Collaboration on  Fossil Energy Technology of Science and Technology of the Republic of Korea for a Research and the Korea Institute of Institute of Science and Improving fossil energy technology. Remains in force
Comment: 11/7/1995 Title: Comment: 6/13/1994 Title: Comment: 6/29/2000	Background  11/7/1997  Action Shee Development  6/13/1999  Implementir Cooperative and Techno Promote tech for 5 years of 6/29/2005  Annex 4 Joi Memorandu	Completed at 2 between 1 to f Human F  Completed ag Arrangemen Laboratory F Laboratory F Innological and runtil terminat In Force	Secondary DOE The U.S. Department Resource for Nuclei Primary DOE ant No. 2 Between the Relations between the conomic cooperation of the S&T Agree Secondary DOE Cintichem Technolanding between the	True  t of Energy True the Departi the Pittsbu  on in the fiement, whi True	Primary DOE  In (DOE) and The Mards Inspection  Intergovernmental ment of Energy of turgh Energy Technologichever occurs first.  Primary DOE  een the Department	Arms Control and Nonproliferation  inistry of Science and Technology (MOST) of  Fossil Energy the United States of America and the Ministry of logy Center and the Korea Institute of Energy  y development to make positive contributions tow  Nuclear Energy	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection the Republic of Korea for Joint Collaboration on  Fossil Energy Technology of Science and Technology of the Republic of Korea for Research and the Korea Institute of Institute of Science and Improving fossil energy technology. Remains in force  Annex 4 - Cintichem Process Technology (first project annex)
Comment: 11/7/1995 Title: Comment: 6/13/1994 Title: Comment: 6/29/2000	Background: 11/7/1997  Action Shee Developmer: 6/13/1999 Implementir Cooperative and Techno Promote tech for 5 years of 6/29/2005  Annex 4 Joi Memorandu Cooperative	Completed at 2 between 1 at of Human F  Completed ag Arrangeme Laboratory F logy in the Arrangological and runtil terminat  In Force	Secondary DOE The U.S. Department Resource for Nuclei Primary DOE ant No. 2 Between the Relations between the conomic cooperation of the S&T Agree Secondary DOE Cintichem Technolanding between the	True  t of Energy True the Departi the Pittsbu  on in the fiement, whi True	Primary DOE  In (DOE) and The Mards Inspection  Intergovernmental ment of Energy of turgh Energy Technologichever occurs first.  Primary DOE  een the Department	Arms Control and Nonproliferation  inistry of Science and Technology (MOST) of  Fossil Energy the United States of America and the Ministry of logy Center and the Korea Institute of Energy  y development to make positive contributions tow  Nuclear Energy	Action Sheet 2 - Human Resource Development for Nuclear Safeguards Inspection  the Republic of Korea for Joint Collaboration on  Fossil Energy Technology of Science and Technology of the Republic of Korea for Research and the Korea Institute of Institute of Science and Improving fossil energy technology. Remains in force  Annex 4 - Cintichem Process Technology (first project

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Start Date	F. 4 B.4-	ents	A	Lanctic	Donort Time	DOE Office	Priof Description
	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	:						
9/15/2003	9/15/2008	In Force	Secondary DOE	True		Science and Technology	Annex VI - Innovative Fuel Cycles
Title:	: Annex VI to Republic of	the Memoran Korea for a C	dum of Understand coperative Laborat	ing betwe ory Relati	en the Department onship On a Collab	t of Energy of the United States of America porative Project Supporting Research and l	and the Ministry of Science and Technology of the Development in the Field of Innovative Fuel Cycles
Comment:	:						
9/19/1994	9/19/1999	Completed	Primary DOE	True		Arms Control and Nonproliferation	International Safeguards
Title:	: Arrangemer Nuclear Mat	it between the erial Control,	e United States Dep Accountancy, Veril	artment o ication, P	f Energy and the M hysical Protection	linistry of Science and Technology of the F and Advanced Containment and Surveillar	Republic of Korea Concerning Research and Development ince Technologies for International Safeguards Applications
Comment:	: Need copy o	f arrangement					
5/16/2001	5/16/2006	In Force	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex V - MOU between DOE and Ministry of Science and Technology of the Republic of Korea on I-NERI
Title:	: Annex V to a of Korea for	the Memoran a Cooperativ	dum of Understandi re Laboratory Relati	ng betwe onship or	en the Department a Collaboration P	of Energy of the United States of America roject Supporting the International Nuclear	and the Ministry of Science and Technology of the Republic Energy Research Initiative (INERI)
Comment:	:						
5/16/2001	6/14/2001	In Force	Secondary DOE	True	Primary DOE	Nuclear Energy	Amendment C to Annex III Participating Institutions to the MOU between DOE and Ministry Science and Technology
Title:	: Amendment Ministry of S	t C to Annex I Science and 1	'll - Participating Ins 「echnology of the R	titutions t epublic o	o the Memorandur Korea for a Coop	n of Understanding between the Departme erative Laboratory Relationship	nt of Energy of the United States of America and the
Comment:	:						
2/2/2005		Completed	edit test	True		Nuclear Energy	Amendment to Annex V
Title:	: Amendment of the Repu	t to Annex V t blic of Korea	to the Memorandum for a Cooperative L	of Under aboratory	standing Between Relationship On a	the Department of Energy of the United Sta Collaborative Project Supporting the Inter	ates of America and the Ministry of Science and Technology national Nuclear Energy Research Initiative (I-NERI)
Comment	:						
6/14/2001	6/14/2006	In Force	Secondary DOE	True	Primary DOE	Science and Technology	E. I. IA IMOULT DOFIMOOT
			•		•		Extend and Amend MOU bet. DOE and MOST
Title	: Agreement Technology	to Extend and of the Repub	d Amend the Memor	andum of	Understanding be Laboratory Relati	tween the Department of Energy of the Uni	ited States of America and the Ministry of Science and
Title:	Technology	of the Repub	d Amend the Memor blic of Korea for a Co	andum of coperativ	Understanding be Laboratory Relati	tween the Department of Energy of the Uni ionship	
Comment	Technology :	to Extend and of the Repub	d Amend the Memoi plic of Korea for a C	andum of coperativ	Understanding be Laboratory Relati	tween the Department of Energy of the Uni ionship	
Comment:	Technology :	of the Repub	blic of Korea for a Co	ooperativ	Understanding be e Laboratory Relati	ionship	ited States of America and the Ministry of Science and
Comment: Country: 6/15/1972	Technology : Mexico	of the Repub	Intergovernmental	True	e Laboratory Relati	tween the Department of Energy of the Unitionship  Science and Technology  fic and Technical Cooperation	
Comment: Country: 6/15/1972 Title:	Technology : Mexico : Agreement	In Force	Intergovernmental United States of Am	True	e Laboratory Relati	Science and Technology	ited States of America and the Ministry of Science and
Comment: 6/15/1972 Title: Comment:	Technology : Mexico : Agreement : Effected by I	In Force Between the	Intergovernmental United States of Am lotes Signed at Wash	True	e Laboratory Relati	Science and Technology	ited States of America and the Ministry of Science and
Comment: 6/15/1972 Title: Comment: 6/20/1983	Technology : Mexico : Agreement : Effected by E 6/30/1990 : Memorandu	In Force Between the Exchange of N Expired	Intergovernmental United States of Am lotes Signed at Wash Primary DOE tanding for the Exch	True erica and ington Jur False ange of 1	Mexico for Scienti	Science and Technology  fic and Technical Cooperation  Fossil Energy	ited States of America and the Ministry of Science and Science & Technology
Comment: 6/15/1972 Title: Comment: 6/20/1983	Technology :  Mexico : Agreement : Effected by 6 6/30/1990 : Memorandu Petroleum I	In Force Between the Exchange of N Expired	Intergovernmental United States of Am lotes Signed at Wash Primary DOE tanding for the Exch	True erica and ington Jur False ange of 1	Mexico for Scienti	Science and Technology  fic and Technical Cooperation  Fossil Energy on and for Cooperation in the Field of Ener	Science & Technology  PetroleumSister Labs
Comment: 6/15/1972 Title: Comment: 6/20/1983 Title: Comment: 3/25/1985	Technology : Mexico : Agreement : Effected by E 6/30/1990 : Memorandu Petroleum I : 3/25/2005	In Force Between the Exchange of N Expired In of Understantitute of Me	Intergovernmental United States of Am lotes Signed at Wash Primary DOE tanding for the Exchesico and the Depart	True erica and ington Jur False ange of 1 tment of E	Mexico for Scienti e 15, 1972 echnical Informati energy of the Unite	Science and Technology  ific and Technical Cooperation  Fossil Energy on and for Cooperation in the Field of Enerd d States of America  Arms Control and Nonproliferation	Science & Technology  Petroleum—Sister Labs Ty Research and Development between the Mexican Sister Lab Arrangement
Comment: 6/15/1972 Title: Comment: 6/20/1983 Title: Comment: 3/25/1985	Technology : Mexico : Agreement : Effected by E 6/30/1990 : Memorandu Petroleum I. : 3/25/2005 : Memorandu	In Force Between the Exchange of N Expired on of Understitute of Me	Intergovernmental United States of Am lotes Signed at Wash Primary DOE tanding for the Exchesico and the Depart	True erica and ington Jur False ange of 1 tment of E	Mexico for Scienti e 15, 1972 echnical Informati energy of the Unite	Science and Technology  ific and Technical Cooperation  Fossil Energy on and for Cooperation in the Field of Enerd d States of America  Arms Control and Nonproliferation	Science & Technology  PetroleumSister Labs gy Research and Development between the Mexican
Comment: 6/15/1972 Title: Comment: 6/20/1983 Title: Comment: 3/25/1985 Title:	Technology :  Mexico : Agreement : Effected by E 6/30/1990 : Memorandu Petroleum I : 3/25/2005 : Memorandu Institute of	In Force  Between the Exchange of N  Expired of Understantitute of Me  In Force of Understantitute of Understantitute of Understantitute of Understantitute of Understantitute of Rese	Intergovernmental United States of Am lotes Signed at Wash Primary DOE tanding for the Exchesico and the Depart	True erica and ington Jur False ange of 1 tment of E False se Exchanthe Los A	Mexico for Scienti e 15, 1972 echnical Informati energy of the Unite	Science and Technology  ific and Technical Cooperation  Fossil Energy on and for Cooperation in the Field of Ener d States of America  Arms Control and Nonproliferation formation and for Cooperation in the Field	Science & Technology  Petroleum—Sister Labs By Research and Development between the Mexican  Sister Lab Arrangement

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Memorandui United State	n of Understa s of America	anding for the Exch and the Mexican Pe	ange of 1 etroleum	Technical Information	on and For Cooperation in the Field of Air Quality ted Mexican States	Research Between the Department of Energy of the
Comment:							
4/1/1986	4/7/1994	Expired	Primary DOE	True		Energy Efficiency and Renewable Energy	Geothermal
	Agreement L Geothermal		Department of Energ	gy of the	United States of Ar	merica and the Comision Federal de Electricidad o	of the Mexican United States in the Field of
Comment:	TECHNICAL	DISCUSSION	S, JOINT RESEARC	H			
7/21/1977	12/31/1982	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Geothermal
Title:	Agreement E	Between the C	Comision Federal de	e Electrid	licidad of the United	d Mexican States and the U.S.A. Energy Research	and Development Administration
Comment:	Description n	ot available in	History				
5/7/1996	5/7/2001	In Force	Primary DOE	True	Intergovernmental	Energy Research and Development	Energy Cooperation
Title:	Agreement L	etween the D	Department of Energ	y of the	United States of Ar	nerica and the Secretariat of Energy of the United	Mexican States for Energy Cooperation
	energy efficie	ncy and fossil	operation to facilitate energy technologies otion of energy trade	, giving di	ue consideration to e	e activities in research, development and commercializenvironmental concerns, as well as to exchange, deve	zation to promote improved use of renewable energy and lop, and analyze energy strategies and regulatory criter
12/7/1999	5/7/2001	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 4- Clean Fossil Energy Technologies
Title:	Project Anne	ex 4 Coopera	tion in the field of (	Clean Fos	ssil Energy Technol	logies	
Comment:	Annex is in fo	rce as long as	the Agreement is in	force.			
6/10/1998	6/10/2001	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 1 - Renewable Energy
Title:	Project Anne	x 1 Cooperat	tion in the Field of I	Renewabl	le Energy		
Comment:	Project areas	under discuss	sion by SNL and CN	EA (Mexic	o National Commiss	ion for Energy Savings)	
6/10/1998	6/10/2001	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 2 - Energy Efficiency
Title:	Project Anne	ex 2 Coopera	ntion in the Field of	Energy E	fficiency		
Comment:	Project areas	under discuss	sion.				
10/21/1998	10/21/2001	In Force	Secondary DOE	True	Primary DOE	Environmental Restoration and Waste Management	Annex 3 - Enviro Cooperation in hydrocarbons
Title:	Project Ann	ex 3 - Environ	nmental Cooperatio	n in the F	ield of Hydrocarbo	ns	
Comment:	Facilitating w	ork between M	Mexico Institute of Pe	troleum a	nd ORNL.		
5/30/1984	12/31/1986	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Computer Modeling and Mass Transport
Title:	Mexican Pet	roleum Institu	ute of Mexico and t	he Depart	e Exchange of Tech tment of Energy of Probes and Logging	the United States of America on Computer Modeli	of Energy Research and Development between the ing and Mass Transport in Geological Reservoirs as
Comment:	Description n	ot available in	History				
5/30/1984	12/31/1986	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Chemical Process Modeling ASPEN
Title:	Annex II to t Mexican Pet	he Memorand roleum Institu	dum of Understandi ute of Mexico and t	ng for the	e Exchange of Tech tment of Energy of	nnical Information and for Cooperation in the Field the United States of America on Chemical Proces	l of Energy Research and Development between the s Modeling (ASPEN)
	Description r	ot available in	History				
Comment:		Completed	Statement of Intent			Energy Research and Development	Energy Cooperation
4/10/1995				tment of	Energy of the Unite	d States of America and the Ministry of Energy of	the United States of Mexico for Energy Cooperation
4/10/1995 Title:							
4/10/1995 Title:	Joint Statem	ent of Intent to		ays to pu	ırsue joint cooperativ	re efforts in areas such as renewable energy, energy of	efficiency technologies, data analysis and forecasting,
4/10/1995 Title:	Joint Statem	ent of Intent to	agree and look for v	ays to pu	ırsue joint cooperativ	re efforts in areas such as renewable energy, energy of Fifth Hemispheric Energy Ministers Meeting	

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
5/7/2001	5/7/2006	In Force	Secondary DOE	True	Primary DOE	Science and Technology	
Title:				eration b	etween the Depa	rment of Energy of the United States of Ameri	ica and the Secretariat of Energy of the United Mexican
	States, and i	ts Four Anne	exes				
Comment:							
Country:			5: 505	_		_ =====================================	
10/16/2000	10/16/2005	In Force	Primary DOE	True		Energy Efficiency and Renewable Energy	Agreement on Concerning Cooperation in Energy Efficiency and Renewable Energy
Title:	Agreement b	Between The	Department of Ener	gy of the	United States of	America and The Ministry of Industry, Comme	erce, Energy and Mines of the Kingdom of Morocco
	Concerning	Cooperation	in Energy Efficiency	y and Rei	newable Energy	•	
Comment:							
10/16/2000	10/16/2005	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Project Annex I - EERE
Title:	Project Anno Kinadom of	ex I to the Ag Morocco Col	reement between th ncerning Cooperation	e Depart on in Ene	ment of Energy o ray Efficiency an	if the United States of America and the Ministr d Renewable Energy	y of Industry, Commerce, Energy and Mines of the
Comment:	_		nooning Gooperatio		gy zanoloney un	- · · · · · · · · · · · · · · · · · · ·	
6/3/2002	6/3/2007	In Force	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Project Annex 2 - Clean Energy Technologies
	Project Anne		•		•		ry of Industry, Commerce, Energy and Mines of the
			ncerning Cooperation				
Comment		···					
Country:	Netherland	s					
6/29/1982	6/29/1992	Expired	Primary DOE	False		Information and/or Personnel Exchange	Energy-Related Information
Title:	Memorandu	m of Underst	anding between the	Departm	ent of Energy of	the United States of America and the Ministry	of Economic Affairs of the Netherlands
	Exchange of	energy relate	d information		<del></del>		
10/11/1979	10/11/1984	Expired	Primary DOE	True		Nuclear Energy	Magnetohydrodynamics
Title	Agreement l Generation	etween the	United States Depar	tment of	Energy and the N	letherlands Energy Research Foundation in th	e field of Magneto hydrodynamic Electrical Power
Comment	Cooperate in	MHD					
	11/11/1984	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Closed-Cycle MHD
		•	•		•	•	dation in Closed-Cycle Magnetohydrodynamic (CCMHD
	•	-	ly advance the under	-	_	•	
Country:	Nigeria		- <del></del>				
7/23/1980		In Force	Statement of Intent	False		Energy Research and Development	Energy R&D
	Memorandu			_	on between the G		nd the Government of the Federal Republic of Nigeria
	Exploit and u	se conventior	nal sources of energy.	develop	effective machiner	ry to monitor environmental effects of energy, deve	elop and demonstrate technologies to utilize new and fficial cooperation. Formal cooperation never establish
8/14/1999		In Force	Primary DOE	False		Energy Policy	MOU on Energy Policy
Title	Memorandu Nigeria on E	m of Underst nergy Policy	tanding between the	Departm	ent of Energy of	the United States of America and the Federal	Ministry of Power and Steel of the Federal Republic of
Comment	<u> </u>						
Country:	Norway						
4/22/1987	4/22/1992	Expired	Primary DOE	True		Fossil Energy	Fossil Energy - Enhanced Oil Recovery
Title	General agre	ement for fo	ssil energy researc	h and dev	elopment betwe	en the U.S. Department of Energy and the Nor	wegian Ministry of Petroleum and Energy.
Comment	Exchange ted	chnical inform	ation and conduct co	mplement	ary research rega	rding fossil energy R&D	
8/2/1990	4/22/1992	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 1 Absorption of Chemicals on Reservoir Rock

	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Annex I to th	e USDOE - N			um and Energy ag	reement on fossil energy research and develop	ment in chemical enhanced oil recovery in the area of
Comment:				REA OF A	DSORPTION OF (	CHEMICALS ON RESERVOIR ROCK.	
8/2/1990	4/22/1992	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 2 Multitracer Tech Applied Petroleum Reservoir
0/2/1330	7/22/1992	Lxpired	Secondary DOL	TIGE	i iiiiaiy boc	1 033ii Elicigy	Study
Title:	Annex II to to Technology	he US Depart Applied to Pe	tment of Energy - No etroleum Reservoir S	rwegian Studies	Ministry of Petrole	eum and Energy Agreement on Fossil Energy Re	esearch and Development in the area of Multitracer
Comment:	Cooperate in	multitracer ted	chnologies applied to	petroleun	reservoir studies		
8/2/1990	4/22/1992	Expired	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Annex 3- Geologic Reservoir DataBase Stochastic Modeling
Title:			ent of Energy - Norv ase for stochastic m		inistry of Petroleu	m and Energy agreement on fossil energy resea	arch and development in the area of development of a
Comment:	REVIEW GE	<u>OSTATISTICA</u>	AL METHODOLOGIE	s			
5/23/2004	5/23/2009	In Force	Primary DOE	True		Energy Research, Development and Demonstrat	ion MOU bet. DOE and Ministry of Petroleum and Energy
Title:			landing between the ield of Energy Resea				try of Petroleum and Energy of the Kingdom of Norwa
Comment:							
Country: F	Pakistan						
9/24/1994		In Force	Statement of Intent	False		Climate Change	Climate Change
Title:	Joint Statem Pakistan	ent of Intent	between the Depart	ment of E	nergy of the Unite	ed States of America and the Environment and U	Irban Affairs Division of the Islamic Republic of
Comment:	Enhancing m	utual environn	nental protection, in p	articular,	controlling greenho	use gas emissions to limit potential adverse climate	change impacts (Environment and Urban Affairs Division)
9/24/1994		In Force	Statement of Intent	False		Fossil Energy	Statement of Intent w/ Ministry of Petroleum and Natural Resources
Title:	Statement of Republic of		een the Department	of Energy	of the United Sta	tes of America and the Ministry of Petroleum an	nd Natural Resources, Government of the Islamic
Comment:		ade, investmer					vate-sector entities in the fields of fossil fuels (petroleum e of experience and views on opportunities in these sectors
<b>Comment:</b> 9/24/1994		ade, investmer		vable ene			
9/24/1994	and minerals	ade, investmer , including coa In Force	al) and new and renew Statement of Intent	vable ene False	rgy resources, relat	ed infrastructure development, and in the exchange	e of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power
9/24/1994 Title:	Statement o Promoting tra	ade, investmen , including coa In Force f Intent betwe ade, investmen	al) and new and renew Statement of Intent een the Department nt and cooperation be	vable ene False of Energy tween the	rgy resources, related of the United States  U.S. and Pakistan	ted infrastructure development, and in the exchange Energy Efficiency and Renewable Energy sites of America and the Ministry of Water and Po	e of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power
9/24/1994 Title: Comment:	Statement o Promoting tra	ade, investmen , including coa In Force <b>f Intent betwe</b> ade, investmen change of exp	al) and new and reneval Statement of Intent een the Department of and cooperation be berience and views on	vable ene False of Energy tween the	rgy resources, related of the United States  U.S. and Pakistan	ted infrastructure development, and in the exchange Energy Efficiency and Renewable Energy Ites of America and the Ministry of Water and Po (Ministry of Water and Power) private and public so	e of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan
9/24/1994 Title: Comment:	Statement o Promoting tra	ade, investmen , including coa In Force <b>f Intent betwe</b> ade, investmen change of exp	al) and new and renev Statement of Intent een the Department nt and cooperation be berience and views on	rable ene False of Energy tween the	rgy resources, related of the United States  U.S. and Pakistan	ted infrastructure development, and in the exchange Energy Efficiency and Renewable Energy Ites of America and the Ministry of Water and Po (Ministry of Water and Power) private and public so	e of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan
9/24/1994 Title: Comment: Country: F 2/22/2000 Title:	Statement o Promoting tra and in the ex Palestinian	ide, investmer , including coa In Force f Intent betwee ide, investmer change of exp Authority In Force	al) and new and renev Statement of Intent een the Department nt and cooperation be perience and views on Statement of Intent	rable ene False of Energy tween the opportun False	rgy resources, related of the United State U.S. and Pakistan ities for improving 6	Ed infrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Pot (Ministry of Water and Power) private and public senergy efficiency and enhancing electricity policy.  Energy Research and Development	e of experience and views on opportunities in these sectors  Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment:	Statement o Promoting tra and in the ex Palestinian Joint Statem	ide, investmer , including coa In Force f Intent betwee ide, investmer change of exp Authority In Force	al) and new and renev Statement of Intent een the Department nt and cooperation be perience and views on Statement of Intent	rable ene False of Energy tween the opportun False	rgy resources, related of the United State U.S. and Pakistan ities for improving 6	Ed infrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Pot (Ministry of Water and Power) private and public senergy efficiency and enhancing electricity policy.  Energy Research and Development	e of experience and views on opportunities in these sectors  Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment: Country: F	Statement o Promoting tra and in the ex Palestinian Joint Statem	ade, investmer , including coa In Force f Intent betwee ade, investmer change of exp Authority In Force	al) and new and renev Statement of Intent een the Department int and cooperation be perience and views on  Statement of Intent it between the Depart	vable ene False of Energy tween the opportun  False ment of E	rgy resources, related of the United State U.S. and Pakistan ities for improving 6	Ed infrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Power) private and public stenergy efficiency and enhancing electricity policy.  Energy Research and Development and States of America and the Palestinian Energy	se of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI or Authority on Cooperation in the Field of Energy
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment: Country: F 3/8/2001	Statement o Promoting tra and in the ex Palestinian Joint Statem Peru Joint Statem	ade, investmen, including coa In Force Intent betwee ade, investmen change of exp In Force ment of Intent In Force	al) and new and renev Statement of Intent een the Department int and cooperation be perience and views on  Statement of Intent the between the Depart  Statement of Intent	rable ene False of Energy tween the opportun  False ment of E	rgy resources, related of the United State U.S. and Pakistan ities for improving e	Edinfrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Power) private and public stenergy efficiency and enhancing electricity policy.  Energy Research and Development and States of America and the Palestinian Energy Cooperation in the Field of Energy	e of experience and views on opportunities in these sectors  Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment: Country: F 3/8/2001	Statement o Promoting tra and in the ex Palestinian  Joint Statem  Peru  Joint Statem the Field of	ade, investmen, including coa In Force Intent betwee ade, investmen change of exp In Force ment of Intent In Force	al) and new and renev Statement of Intent een the Department int and cooperation be perience and views on  Statement of Intent the between the Depart  Statement of Intent	rable ene False of Energy tween the opportun  False ment of E	rgy resources, related of the United State U.S. and Pakistan ities for improving e	Edinfrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Power) private and public stenergy efficiency and enhancing electricity policy.  Energy Research and Development and States of America and the Palestinian Energy Cooperation in the Field of Energy	se of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI or Authority on Cooperation in the Field of Energy  Cooperation in the Field of Energy
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment: Country: F 3/8/2001 Title:	Statement o Promoting tra and in the ex Palestinian  Joint Statem  Peru  Joint Statem the Field of	ade, investmen, including coa In Force Intent betwee ade, investmen change of exp In Force ment of Intent In Force	al) and new and renev Statement of Intent een the Department int and cooperation be perience and views on  Statement of Intent the between the Depart  Statement of Intent	rable ene False of Energy tween the opportun  False ment of E	rgy resources, related of the United State U.S. and Pakistan ities for improving e	Edinfrastructure development, and in the exchange Energy Efficiency and Renewable Energy ates of America and the Ministry of Water and Power) private and public stenergy efficiency and enhancing electricity policy.  Energy Research and Development and States of America and the Palestinian Energy Cooperation in the Field of Energy	se of experience and views on opportunities in these sectors Statement of Intent w/ Ministry of Water and Power ower of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI of Authority on Cooperation in the Field of Energy  Cooperation in the Field of Energy
9/24/1994 Title: Comment: Country: F 2/22/2000 Title: Comment: Country: F 3/8/2001 Title: Comment: 6/17/1991	Statement o Promoting tra and in the ex Palestinian  Joint Statem  Peru  Joint Statem  6/16/2001  Arrangement	In Force In Force In Force In Force In Authority In Force	al) and new and renev Statement of Intent een the Department int and cooperation be perience and views on  Statement of Intent the between the Depart  Statement of Intent the between the Depart  Primary DOE	rable ene False of Energy tween the opportun  False ment of E  False ment of E	rgy resources, related of the United State U.S. and Pakistan ities for improving energy of the United Energy of Unite	Energy Efficiency and Renewable Energy Ites of America and the Ministry of Water and Po (Ministry of Water and Power) private and public stenergy efficiency and enhancing electricity policy.  Energy Research and Development and States of America and the Palestinian Energy Cooperation in the Field of Energy and States of America and The Ministry of Energy Arms Control and Nonproliferation	Statement of Intent w/ Ministry of Water and Power over of the Islamic Republic of Pakistan ector entities in the fields of fossil and renewable energy,  Energy Planning SOI authority on Cooperation in the Field of Energy  Cooperation in the Field of Energy  and Mines of the Republic of Peru on Cooperation in

	ral Agreeme		Agreement Turn	Lagalle	Parant Torre	DOE Office	Pulet Decembring
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
8/14/2001	8/14/2006	In Force	Primary DOE	True		Science and Technology	MOU - Cooperation in the Field of Energy
Title:		m of Understa in the Field o		Departm	ent of Energy of th	e United States of America and the Ministr	y of Energy and Mines of the Republic of Peru on
Comment:							
Country:	Philippines	i					
6/19/1997	6/19/2002	In Force	Primary DOE	False		Information and/or Personnel Exchange	Info Exchange
	Exchange of	m of Agreeme f Energy Infor		partment	of Energy of the U	nited States of America and the Departmen	t of Energy of the Republic of the Philippines for the
Comment:		1. 5	D-i	T			MOUL PROF POF LUCAIR
1/13/2004	1/13/2009	In Force	Primary DOE	True			MOU among PDOE, DOE and USAID
Títle:			anding among the landing among the landing among the landing the landing among the landing the landing the landing the landing the landing among the landing			ergy, the United States Department of Ener	gy, and the United States Agency for International
Comment:							
Country:	Poland						
3/15/1990	3/15/1995	Expired	Primary DOE	True		Fossil Energy	Clean Coal Technology at Powerplant in Krakow
Title:							l Resources, & Forestry and the Ministry of Industry and the nnology at a Power Plant in Crakow Poland
Comment:						ng, select methods of emission control using l lution for pollution control.	J.S. clean coal technology, fabricate equipment, modify the
9/28/1987	9/28/2002	In Force	Intergovernmental	True		Science and Technology	Science & Technology
Title:	: Agreement I Funding	between the C	Sovernment of the (	United Sta	ites of America and	d the Government of the Polish People's Re	epublic on Cooperation in Science and Technology and its
Comment:	Develop, sup to by the two	port and facilit governments.	ate S&T cooperation Renewed last in 19	on the ba	sis of the principles	of equality, reciprocity, and mutual benefit. Jo	pint projects of mutual interest are funded by a fund contributed
10/16/1991	10/16/1996	Renegotiatin g	Primary DOE	True		Fossil Energy	Krakow Clean Fossil Fuels and Energy Efficiency
Title:						of Energy and the Ministry of Environmenta Project a Project of Elimination of Low Emis	al Protection, Natural Resources, and Forestry of Poland fo ssion Sources in Krakow
Comment	conducting e	ngineering ana		nd incentiv	e analysis and carr		on in Krakow by providing equipment and services and sults of the previously conducted scoping analysis and the
8/21/1995	8/21/2000	In Force	Primary DOE	True		Environmental Restoration and Waste Management	Environmental Restoration Hazardous Waste Mgmt
Title	: Agreement i Republic of	for Technical Poland in the	Exchange and Coo Area of Environme	perating i ental Rest	between the Depar oration and Hazard	tment of Energy of the United States of Am dous Waste Management	erica and the Institute for Ecology of Industrial Areas of th
Comment						, risks associated with human exposure to env ther areas determined by both parties.	vironmental contamination from chemical and heavy metals in
10/8/1974	10/8/1984	Expired	Primary DOE	False		Fossil Energy	Coal R&D
Title	: Agreement l Coal Resear		Department of the li	nterior of	the United States o	of America and the Ministry of Mining and p	power of the Polish People's Republic for Cooperation in
Comment	<u>:</u>						
Country:	Romania						
1/1/1969		Expired	Primary DOE	False		Nuclear Energy	Nuclear Energy

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Memorandu	m on Cooper	ation in the Peacefu	I Uses of		tween the United States Atomic Energy Comi	mission and the Committee for Nuclear Energy of the
		public of Ron	nania for 1969-1970				
Comment:	·						
9/21/1971		Expired	Primary DOE	False	4	Nuclear Energy	Nuclear Energy
	Socialist Re		ation in the peaceru nania for 1971-1972		atomic energy betw	veen the United States Atomic Energy Comm	ission and the State Committee for Nuclear Energy of t
Comment:			D: DOF			A 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.1
3/29/1999	3/26/2004	In Force	Primary DOE	False		Arms Control and Nonproliferation	Sister Lab Arrangement
	Industry and	d Commerce (	(MIC) - Romania	•			States Department of Energy (DOE) and the Ministry of
Comment	: Establishes t of atomic en		cooperative institutio	nal relatio	nship between the p	articipants for the exchange of scientific and tech	hnological and other information regarding the peaceful use
ountry:	Russian Fe	deration					
6/1/1990	12/1/1998	Expired	intergovernmental	True		Science and Technology	S&T Cooperation Peaceful Uses of Atomic Energy
Title	: Agreement : Energy	between the l	United States of Am	erica and	the Union of Sovie	t Socialist Republics on Scientific and Techr	nical Cooperation in the Field of Peaceful Uses of Atom
Comment	: Agreement p	resently active	e, but third limited ext	ension ex	pires 12/1/1998.		
2/18/1993		In Force	Intergovernmental	True		Nuclear Energy	Disposition HEU Extracted From Nuclear Weapons
Title		between the ( om Nuclear V		United Sta	ates of America and	the Government of the Russian Federation	Concerning the Disposition of Highly Enriched Uraniun
Comment						on of nuclear weapons; the establishment of appenents with respect to HEU and LEU.	propriate measures to fulfill the nonproliferation, physical
3/18/1992		In Force	Statement of Intent			Information and/or Personnel Exchange	Electric Power Technologies
Title:	: U.SRussia	Task Force of	on Cooperation in El	lectric Po	wer Technologies	Joint Statement of Intent	
			-		•	Joint Statement of Intent accurage more extensive contacts among experi	·
	: Exchange in	formation on d	-	lectric pov	•		·
9/2/1993	: Exchange in 10/31/1993	formation on d Completed	levelopments in the e	lectric pov False	ver industries and er	ncourage more extensive contacts among exper	ts in this field in both countries.
9/2/1993 Title:	: Exchange in 10/31/1993	formation on d Completed fintent on Er	levelopments in the e Statement of Intent nergy Efficiency and	lectric pov False	ver industries and er	ncourage more extensive contacts among exper	ts in this field in both countries.
9/2/1993 Title:	: Exchange int 10/31/1993 : Statement of	formation on d Completed fintent on Er	levelopments in the e Statement of Intent nergy Efficiency and	lectric pov False	ver industries and er	ncourage more extensive contacts among exper	ts in this field in both countries.
9/2/1993 Title: Comment: 6/16/1995	: Exchange int 10/31/1993 : Statement of : Description r	Completed fintent on Er ot available in In Force m of Agreem	evelopments in the e Statement of Intent nergy Efficiency and History Primary DOE ent between the De	False I Renewa  True partment	wer industries and er ble Energy of Energy of the Ur	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian
Comment: 9/2/1993 Title: Comment: 6/16/1995 Title:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t	Completed  Completed  f Intent on Er  not available in  In Force  m of Agreem  for Cooperation	evelopments in the e Statement of Intent nergy Efficiency and History Primary DOE ent between the Del on in Approved Pro	False I Renewa  True partment jects to F	wer industries and er ble Energy of Energy of the Ur acilitate the Nonpro	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  ited States of America and the International	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se
9/2/1993 Title: Comment: 6/16/1995 Title:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t	Completed  Completed  f Intent on Er  not available in  In Force  m of Agreem  for Cooperation	evelopments in the e Statement of Intent nergy Efficiency and History Primary DOE ent between the Del on in Approved Pro	False I Renewa  True partment jects to F	wer industries and er ble Energy of Energy of the Ur acilitate the Nonpro	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  nited States of America and the International  pliferation of Weapons and Weapons Expertise or eliminate weapons of mass destruction in a	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se
9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996	Exchange int 10/31/1993 Statement of Description r Memorandu Federation t Facilitate coo 9/16/2001	Completed  Completed  f Intent on Er  not available in  In Force  m of Agreem for Cooperation  peration under	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Proper the ISTC agreement Primary DOE	False I Renewa  True partment jects to F nt including	of Energy of the Uracilitate the Nonprogue of Intergovernmental	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  nited States of America and the International  pliferation of Weapons and Weapons Expertise or eliminate weapons of mass destruction in a	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner.  Nuclear Reactor Safety
Comment: 9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate coc 9/16/2001 Memorandu	Completed  fintent on Er  not available in  In Force  m of Agreem  for Cooperation  In Force  In Force  m of Cooperation  In Force  m of Cooperation	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Proper the ISTC agreement Primary DOE	False I Renewa  True partment jects to F nt including True nited State	of Energy of the Ur acilitate the Nonprog the efforts to reduce Intergovernmental tes of America and	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  inited States of America and the International  oliferation of Weapons and Weapons Expertise  or eliminate weapons of mass destruction in a  Nuclear Energy	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner.  Nuclear Reactor Safety
9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate coc 9/16/2001 Memorandu	Completed  fintent on Er  not available in  In Force  m of Agreem  for Cooperation  In Force  In Force  m of Cooperation  In Force  m of Cooperation	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Project the ISTC agreement Primary DOE atton between the Union between the Unio	False I Renewa  True partment jects to F nt including True nited State	of Energy of the Ur acilitate the Nonprog the efforts to reduce Intergovernmental tes of America and	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  inited States of America and the International  oliferation of Weapons and Weapons Expertise  or eliminate weapons of mass destruction in a  Nuclear Energy	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner.  Nuclear Reactor Safety
9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment: 6/21/1973	Exchange into 10/31/1993: Statement of Description of Federation of Facilitate coordinates of P/16/2001: Memorandu replaces MO 12/31/1990	formation on d Completed Intent on Er not available in In Force In of Agreem for Cooperation In Force In Force In Force In Grooperation U in Civilian N Expired	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Project the ISTC agreement Primary DOE entire the United States and the United St	False True partment jects to F nt includin True nited Stat y signed 2 False	of Energy of the Unacilitate the Nonproguthe efforts to reduce Intergovernmental tes of America and 26 April, 1988	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  nited States of America and the International  oliferation of Weapons and Weapons Expertise  or eliminate weapons of mass destruction in a  Nuclear Energy  the Russian Federation in the Field of Civilia	Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner. Nuclear Reactor Safety
Comment: 9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment: 6/21/1973 Title:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate cod 9/16/2001 Memorandu replaces MO 12/31/1990 Agreement	Completed fintent on Er not available in In Force m of Agreem for Cooperatio peration unde In Force m of Coopera U in Civilian N Expired between the te	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Project the ISTC agreement Primary DOE atton between the Utilization between the Utilization primary DOE United States of Am	False True partment jects to F nt includin True nited Stat y signed 2 False	of Energy of the Unacilitate the Nonproguthe efforts to reduce Intergovernmental tes of America and 26 April, 1988	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  nited States of America and the International  oliferation of Weapons and Weapons Expertise  or eliminate weapons of mass destruction in a  Nuclear Energy  the Russian Federation in the Field of Civilia	Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner. Nuclear Reactor Safety  Atomic Energy: Science & Technology Cooperation
Comment: 9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment: 6/21/1973 Title: Comment:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate cod 9/16/2001 Memorandu replaces MO 12/31/1990 Agreement Energy	Completed fintent on Er not available in In Force m of Agreem for Cooperatio peration unde In Force m of Coopera U in Civilian N Expired between the te	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Project the ISTC agreement Primary DOE atton between the Utilization between the Utilization primary DOE United States of Am	False True partment jects to F nt includin True nited Stat y signed 2 False	of Energy of the Unacilitate the Nonproguthe efforts to reduce Intergovernmental tes of America and 26 April, 1988	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  ited States of America and the International differation of Weapons and Weapons Expertise or eliminate weapons of mass destruction in a  Nuclear Energy the Russian Federation in the Field of Civilia  Nuclear Energy St Socialist Republics on Scientific and Techn	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner.  Nuclear Reactor Safety  Atomic Energy: Science & Technology Cooperation
9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment: 6/21/1973 Title: Comment: 9/16/1996	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate coc 9/16/2001 Memorandu replaces MO 12/31/1990 Agreement Energy Description r 9/16/2001 Memorandu	Completed fintent on Er not available in In Force m of Agreem for Cooperatio peration unde In Force m of Coopera U in Civilian N Expired between the in In Force	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Proper the ISTC agreement Primary DOE entire detection between the Unclear Reactor Safet Primary DOE United States of Aman History Primary DOE entire detection between the Depondent of Aman History Primary DOE entire detection between the Depondent of Aman History Primary DOE entire detection between the Depondent of Intention between the Depondent of Intention Intenti	False True partment fects to Fint including y signed 2 False erica and	of Energy  of Energy of the Union of Sovie  Intergovernmental  the Union of Sovie	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  ited States of America and the International differation of Weapons and Weapons Expertise or eliminate weapons of mass destruction in a  Nuclear Energy the Russian Federation in the Field of Civilia  Nuclear Energy St Socialist Republics on Scientific and Technology	ts in this field in both countries.  Energy Efficiency and Renewable Energy  Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner.  Nuclear Reactor Safety  Atomic Energy: Science & Technology Cooperation nical Cooperation in the Field of Peaceful Uses of Atomic
9/2/1993 Title: Comment: 6/16/1995 Title: Comment: 9/16/1996 Title: Comment: 6/21/1973 Title: Comment: 9/16/1996 Title:	Exchange int 10/31/1993 Statement of Description r  Memorandu Federation t Facilitate cod 9/16/2001 Memorandu replaces MO 12/31/1990 Agreement Energy Description r 9/16/2001 Memorandu Magnetic Co	Completed fintent on Er not available in In Force m of Agreem for Cooperatio peration unde In Force m of Coopera U in Civilian N Expired between the te not available in In Force m of Coopera on finement Force m of Coopera	Statement of Intent nergy Efficiency and History Primary DOE ent between the Depon in Approved Proper the ISTC agreement Primary DOE entire detection between the Unclear Reactor Safet Primary DOE United States of Aman History Primary DOE entire detection between the Depondent of Aman History Primary DOE entire detection between the Depondent of Aman History Primary DOE entire detection between the Depondent of Intention between the Depondent of Intention Intenti	False True partment jects to F nt including True nited State y signed 2 False erica and	of Energy  of Energy of the Union of Sovie  Intergovernmental  the Union of Sovie	Energy Efficiency and Renewable Energy  Arms Control and Nonproliferation  ited States of America and the International differation of Weapons and Weapons Expertise or eliminate weapons of mass destruction in a  Nuclear Energy the Russian Federation in the Field of Civilia  Nuclear Energy St Socialist Republics on Scientific and Technology	Nonproliferation of Weapons/Weapons Expertise  Science and Technology Center in the Russian se a safe and secure manner. Nuclear Reactor Safety  Atomic Energy: Science & Technology Cooperation nical Cooperation in the Field of Peaceful Uses of Atom  Magnetic Confinement Fusion

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
	of Atomic El	nergy and the	State Committee fo	r Science	e & Technologies o	f the Russian Federation	Energy of the United States of America and the Minist
Comment:	activities coo	dinated by the	e Joint Coordinating (	Committee	for Research in the	Fundamental Properties of Matter (FCC-FPM)	
9/16/1996	9/16/2001		Primary DOE	True		Fuel Cell Technology	RAFCO
	Fuel Cell Co	nsortium			United States of An	nerica and the Ministry of the Russian Federa	tion on Atomic Energy Regarding a Russian-American
Comment:	Joint R&D wo	ork in fuel cell	technology developm	ent			
9/16/1996	9/16/2001	In Force	Primary DOE	True	Intergovernmental	Environmental Restoration and Waste Management	Environmental Restoration and Waste Management
			ntion between the Do on and Waste Manag		t of Energy of Unite	ed States of America and the Ministry of the Ri	ussian Federation on Atomic Energy in the Fields of
Comment:							
6/17/1992	6/17/1997	Expired	Intergovernmental	True		Energy Research and Development	Fuels and Energy
Title:	Agreement I Fuels and E		Government of the U	Inited Sta	tes of America and	the Government of the Russian Federation of	n Scientific and Technical Cooperation in the Field of
Comment:			velopment of coopera d renewable energy s		e Parties in the area	s of: energy data exchange; energy and ecology;	fossil energy sources; electric power; energy conservatio
1/6/1993		Terminated	Primary DOE	False		High Energy Physics	Superconducting Super Collider
Title:	Agreement l Super Collid		Inited States Depar	tment of l	Energy and the Rus	sian Federation Ministry of Atomic Energy for	a Program of Collaboration on the Superconducting
Comment:						tion and utilization of the SSC accelerator comple is; joint workshops/technical reviews/projects.	x and related detectors through exchanges of information
10/1/1993	10/1/1998	Expired	Primary DOE	True	Intergovernmental	Energy Efficiency and Renewable Energy	Energy Efficiency and Renewable Energy
	Energy Facilitate and	establish cod	perative activities wh	ich will be	undertaken pursuar	nt to the agreement in the area of energy efficienc	ergy and the Russian Federation Ministry of Fuels and you and renewable energy to advance the common interests
4444004					tally acceptable use	of conventional and renewable energy resources	
1/14/1994	1/14/2004		Intergovernmental	True		Environmental Safety Health	Radioactive Contamination Health & Environment
	Purpose of I	Minimizing th	e Consequences of	Radioact	ive Contamination	on Health and the Environment	n Cooperation in Research on Radiation Effects for the
Comment:						ourpose of minimization of the consequences of ra o implement the agreement.	adioactive contamination on health and the environment.
6/15/1995		In Force	Secondary DOE	True	Primary DOE	Fusion Energy	Annex 1 Weapons Expertise for the Globus-M Project
TiAla.	Annex I to ti Russian Fed	ne Memorand Ieration Cond	lum of Agreement b cerning Cooperation	etween th in Appro	ne Department of En eved Projects to Fac	nergy of the United States of America and the cilitate the Nonproliferation Weapons and Wea	International Science and Technology Center in the pons Expertise for the Globus-M Project
i itie:			E IOFFE Physics_T	echnical Ir	stitute in the comple	etion of the GLOBUS-M project by participating in	the modification (or reconstruction) of the experimental ha
	of the Institut	e in order to a	ccommodate the nev	GLOBUS	S-M spherical tokama rimental hall and tho	ak device and the near-by supporting equipment, se buildings needed by the GLOBUS-M project.	the buildings that house all the other device supporting
	of the Institut	e in order to a	ccommodate the nev	GLOBUS	rimental hall and tho	ak device and the near-by supporting equipment, se buildings needed by the GLOBUS-M project.  Environmental Restoration and Waste Management	the buildings that house all the other device supporting  Environmental Restoration and Waste Management
9/18/1990	of the Institut systems, and 9/18/1995	e in order to a the connection Expired	ccommodate the new ons/conduits between Primary DOE	GLOBUS the exper	rimental hall and thos Intergovernmental	se buildings needed by the GLOBUS-M project.  Environmental Restoration and Waste Management	the buildings that house all the other device supporting
9/18/1990 Title:	of the Institut systems, and 9/18/1995 Memorandu Republics	e in order to a the connection Expired m of coopera	ccommodate the new ons/conduits between Primary DOE ation in the fields of	r GLOBUS the exper True	rimental hall and those Intergovernmental nental restoration as	se buildings needed by the GLOBUS-M project.  Environmental Restoration and Waste Management	the buildings that house all the other device supporting  Environmental Restoration and Waste Management tes of America and the Union of Soviet Socialist
9/18/1990 Title:	of the Institut systems, and 9/18/1995 Memorandu Republics	e in order to a the connection Expired m of coopera	ccommodate the new ons/conduits between Primary DOE ation in the fields of	True  environm  OPS IN TI	rimental hall and those Intergovernmental restoration as HE AREAS OF VITR	se buildings needed by the GLOBUS-M project. Environmental Restoration and Waste Management and waste management between the United Sta	the buildings that house all the other device supporting  Environmental Restoration and Waste Management tes of America and the Union of Soviet Socialist
9/18/1990 Title: Comment: 7/5/1991	of the Institut systems, and 9/18/1995 Memorandu Republics US/USSR TE 7/5/1996 Memorandu	e in order to a the connectic Expired  m of coopera  CHNICAL EX Expired	ccommodate the new ons/conduits between Primary DOE ation in the fields of CCHANGE WORKSH Primary DOE ation in the field of re	True  environm  OPS IN TI  False	rimental hall and those Intergovernmental restoration at HE AREAS OF VITR Intergovernmental	se buildings needed by the GLOBUS-M project.  Environmental Restoration and Waste Management and waste management between the United Sta  EIFICATION & MODELING. JCCEM MTG. ATTEN High Energy Physics	the buildings that house all the other device supporting  Environmental Restoration and Waste Management  tes of America and the Union of Soviet Socialist  DANCE

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
7/5/1991	7/5/1996	Expired	Primary DOE	True	Intergovernmental	Fusion Energy	Magnetic Confinement Fusion
Title:	Memorandu Industry	m of coopera	tion in the field of n	nagnetic d	confinement fusion	between U.S. Department of Energy and the fo	ormer Soviet Union Ministry of Atomic Power and
Comment	COOPERAT	ION IN PHYSI	CS AND TECHNOLO	OGY RES	EARCH		
3/24/1999	3/24/2004	In Force	Primary DOE	True		Science and Technology	MOU w/ Russian Academy of Sciences
Title:	Memorandu Technology		anding between the	Departm	ent of Energy of th	e United States of America and the Russian Ad	cademy of Sciences on Cooperation in Science and
Comment					<del></del>		
5/31/2000	9/30/2002	In Force	Tertiary DOE	True	Secondary DOE	Environmental Restoration and Waste Management	Appendix D- Annex A - Chara. Of Contaminated Territories
_	Contaminate	Appendix D li ed Territories	mplementing Arrang , Monitoring Netwo	gement #2 rk Optimiz	2 of the U.S. Depart zation, and Cost Mi	ment of Energy/Russian Academy of Sciences nimization	s Memorandum of Understanding Characterization of
Comment:		In Force	Secondary DOF	T	D-i DOF	Favironmental Destaurtion and Works	DOE/DAC Implementing Assessment 4
5/15/2000	3/24/2004	In Force	Secondary DOE	True	Primary DOE	Environmental Restoration and Waste Management	DOE/RAS Implementing Arrangement 1
Title						g between the United States Department of End a and Accumulation of Radionuclides in Geolo	ergy and the Russian Academy of Sciences on gic Media
Comment	:						
5/15/2000	3/24/2004	In Force	Secondary DOE	True	Primary DOE	Environmental Restoration and Waste Management	DOE/RAS Implementing Arrangement 2
Title	Implementir Cooperation	ng Arrangeme n in Science a	ent #2 Under the Me and Technology - Ri	morandui sk Assess	m of Understanding sment and Advance	g between the United States Department of End ed Modeling Regarding Geologic Disposal	ergy and the Russian Academy of Sciences on
Comment							
6/22/1999	6/22/2001	In Force	Secondary DOE	True	Primary DOE	Fusion Energy	ISTC Annex III -Advanced Diagnostics equipment for Spherical Tokamak Globus-M
Title	Russian Fed	leration Cond	dum of Agreement cerning Cooperation Globus-M (ISTC Pro	in Appro	ved Projects to Fa	Energy of the United States of America and the cilitate the Nonproliferation of Weaons and W	e International Science and Technology Center in the leapons Expertise for Advanced Diagnostics Equipmen
Comment							
7/24/1998	7/24/2003	In Force	Intergovernmental	True		Arms Control and Nonproliferation	Plutonium Management
Title			Government of the l m that has been wit			I the Government of the Russian Federation or Programs	n Scientific and Technical Cooperation in the
Comment	DOE is the E	xecutive Ager	nt for the US. The ag	reement e	stablishes the U.SI	Russian Joint Steering Committee on Plutonium N	Management
4/23/2002		In Force	Statement of Intent	False		Science and Technology	Joint Statement of Intent between DOE and Dubna
Title	Joint Staten	ent of Intent	between the Depart	tment of E	Energy of the United	d States of America and the Joint Institute for a	Nuclear Research at Dubna
Comment							
6/26/2000	6/30/2005	In Force	Secondary DOE	True	Primary DOE	Arms Control and Nonproliferation	Extension bet. DOE federal Nuclear and Radiation Safety Authority of Russia
Title			greement between rotection, Control a				Nuclear and Radiation Safety Authority of Russia to
Comment	<u> </u>						
3/1/1999		In Force	Primary DOE	True		Nuclear Energy	Report on Nuclear Energy

Title: Report on Nuclear Energy Use Issues of the Energy and Energy Policy Joint U.S.-Russian Commission on Economic and Technological Cooperation (Washington, March 1999)

tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment	:						
4/25/2001	4/25/2004	In Force	Secondary DOE	True	Primary DOE	Science and Technology	Appendix K w/ the Russian Academy of Sciences
Title			menting Arrangeme and Technology	ent #1 of ti	he Memorandum o	of Understanding Between the U.S. Departmen	nt of Energy and Russian Academy of Sciences on
Comment:							
9/22/1998	9/22/2003	In Force	Intergovernmental	True		Arms Control and Nonproliferation	Nuclear Cities Initiative
	•					nd the Government of the Russian Federation	
Comment:		S Executive A	Agent for the carrying	g out provi	sions of the agreen	nent. Ministry of the Russian Federation for Atom	
6/2/2000	9/30/2003	In Force	Tertiary DOE	True	Secondary DOE	Civilian Radioactive Waste Management	Appendix C - Contaminant Transport Processes in Unsaturated Rocks
Title	: Appendix C Research to	Implementin Further Deve	g Arrangement #2 o elop the Methods of	of the U.S. f Describi	Department of En ng and Modeling (	nergy/Russian Academy of Sciences Memorar Contaminant Transport Process in Unsaturate	ndum of Understanding Interdisciplinary Fundamental d Rocks
Comment							
5/16/2000	9/20/2002	In Force	Tertiary DOE	True	Secondary DOE	Environmental Restoration and Waste Management	Appendix D - Uranium Mass Transport Phenomena
Title	: Appendix D Phenomena	Implementin in Fractured	g Arrangement #1 c Welded Tuffs	of the U.S.	Department of En	nergy/Russian Academy of Sciences Memoral	ndum of Understanding Uranium Mass Transport
Comment	:						
3/16/1994		In Force	Primary DOE	False		Nuclear Energy	Replacement of Russian Pu Production Reactors
Title	: Protocol of	Meeting betw	een the United Stat	tes and th	e Russian Federat	tion on the Replacement of Russian Plutonium	n Production Reactors
Comment	: Plan for repla	cement of plu	itonium production re	eactors with	n alternate energy s	sources.	
9/16/1996	9/16/2001	In Force	Secondary DOE	True	Primary DOE	Nuclear Energy	Annex 1
Title	: Annex 1 - Li	st of Organiz	ations that could pa	articipate			
Comment	:						
5/31/2000	9/30/2002	In Force	Tertiary DOE	True	Secondary DOE	Environmental Restoration and Waste Management	Appendix D - Annex B - Uncertainty Assessment
Title	: Annex B of A Geology in I	Appendix D I Development	mplementing Arran of Inverse Flow and	gement #2 d Transpo	2 under the DOE-F ert Models	RAS Memorandum of Understanding Uncertain	nty Assessment Through Incorporation of Mathematica
Comment							
5/18/2000	9/30/2003	In Force	Tertiary DOE	True	Secondary DOE	Civilian Radioactive Waste Management	Appendix G - Interaction of Actinides and Fission Products
Title			ng Arrangement #1 onvironmental Matric		Department of Er	nergy/Russian Academy of Science Memoran	dum of Understanding The Interaction of Actinides and
Comment	:						
5/18/2000	9/30/2003	In Force	Tertiary DOE	True	Secondary DOE	Civilian Radioactive Waste Management	Appendix H - Actinide Speciation
Title	: Appendix H Environmen	Implementin t to Support	g Arrangement #1 o Safety Assessment	of the U.S. t of Geolog	Department of Er gic Repositories a	nergy/Russian Academy of sciences Memorar and for the Remediation of Contaminated Sites	ndum of Understanding Actinide Speciation in the s
Comment	:						
6/30/2000	6/30/2005	In Force	Secondary DOE	True	Primary DOE	Civilian Radioactive Waste Management	Protocol extending the agreement between DOE an Russia
	. Dundanal Fu	andina tha A	laroomont batwaan	the Dene	rtment of Energy (	of the United States of America and the Feder	al Nuclear, and Radiation Safety Authority of Russia for
Title	Cooperation	on Enhanci	ng the Safety of Ru	ssian Nuc	lear Fuel Cycle Fa	cilities and Research Reactors	ar reducer, and reduction during reducing or reducing
	Cooperation	on Enhanci	ng the Safety of Rust mention above for five	ssian Ňuc	lear Fuel Cycle Fa	acilities and Research Reactors	

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:						f the United States of America and the Internationalian Radioactive Waste Management	al Science and Technology Center in the Russian
Comment:	:						
9/24/2003		In Force	Secondary DOE	True		Science and Technology	Implementing Arrangement #3 - Depleted Uranium
Title:			ent #3 - Depleted Ur in Science and Te		ler Memorandum	of Understanding between the United States Department	artment of Energy and the Russian Academy of
Comment:	:						
12/2/2003	12/2/2008	In Force	Extension	True		Science and Technology	Extension of the MOU bet. DOE and RAS signed March 24, 1999
Title:						America and the Russian Academy of Sciences to sian Academy of Sciences on Cooperation in Scien	Extend the "Memorandum of Understanding betwee nce and Technology" signed March 24, 1999
Comment:	:						
3/17/2004	3/17/2007	In Force	Primary DOE	True		Science and Technology	Appendix L
Title:			menting Arrangeme nd Technology	nt #1 of th	e Memorandum (	of Understanding Between the U.S. Department of	Energy and Russian Academy of Sciences on
Comment:	-	00,0,,00	.u . coogy				
5/8/2002		In Force	Primary DOE	True		Purchases of Pu-238 for Peaceful Purposes	Purchases of Pu-238 for Peaceful Purposes
Title:	: Joint Anno Peaceful Pu	incement by rposes	the United States D	epartment	of Energy and th	ne Russian Federation Ministry for Atomic Energy	Concerning Continued Purchases of Pu-238 for
	_						
Comment:							
	10/1/2002	In Force	Secondary DOE	True	Primary DOE	Uranium Mass Transport Phenomena in Fractured Welded Tuffs	Appendix D of Implementing Arrangement #1w/ Russian Academy of Sciences MOU
10/1/2000	10/1/2002 : Appendix D	Implementin	ŕ		·		Russian Academy of Sciences MOU
10/1/2000	10/1/2002 Appendix D Phenomena	Implementin	g Arrangement #1 c		·	Welded Tuffs	Russian Academy of Sciences MOU
10/1/2000 Title: Comment:	10/1/2002 Appendix D Phenomena	Implementin	g Arrangement #1 c		·	Welded Tuffs	Russian Academy of Sciences MOU
<b>Comment:</b> 6/13/1995	10/1/2002  Appendix Description Phenomena 6/13/2000  Agreement	Implementin in Fractured Expired	g Arrangement #1 of Welded Tuffs Primary DOE  U.S. Department of	True	Department of E	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation	Russian Academy of Sciences MOU  m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian
10/1/2000 Title: Comment: 6/13/1995 Title:	10/1/2002  Appendix D Phenomena  6/13/2000  Agreement of Russian	Implementin in Fractured Expired	g Arrangement #1 of Welded Tuffs Primary DOE	True	Department of E	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation	Russian Academy of Sciences MOU m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian Federation
10/1/2000 Title: Comment: 6/13/1995 Title: Comment:	10/1/2002  Appendix D Phenomena  6/13/2000  Agreement of Russian	Implementin in Fractured Expired	g Arrangement #1 of Welded Tuffs Primary DOE  U.S. Department of	True	Department of E	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation	Russian Academy of Sciences MOU m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian Federation
10/1/2000 Title: Comment: 6/13/1995 Title: Comment: 3/12/2003	10/1/2002  Appendix Description of Phenomena of Russian  Agreement Atomic Ene	Expired  between the Nuclear Fuel  In Force  between the rgy Concerning	g Arrangement #1 of Welded Tuffs  Primary DOE  U.S. Department of Cycle Facillities and Primary DOE  Department of Energy	True Energy and Research True gy of the t	Department of E  of the Federal Nuclei Reactors  United States of A	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation	Russian Academy of Sciences MOU  m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian Federation  n Federation for Cooperation on Enhancing the Safe
10/1/2000 Title: Comment: 6/13/1995 Title: Comment: 3/12/2003	10/1/2002  Appendix Description of Phenomena of Russian  Agreement of Russian  Agreement Atomic Energy Scholer of Cheleznogo	Expired  between the Nuclear Fuel  In Force  between the rgy Concerning	g Arrangement #1 of Welded Tuffs  Primary DOE  U.S. Department of Cycle Facillities and Primary DOE  Department of Energy the Cessation of	True Energy and Research True gy of the t	Department of E  of the Federal Nuclei Reactors  United States of A	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation Clear and Radiation Safety Authority of the Russian America and the Ministry of the Russian Federation	Russian Academy of Sciences MOU  m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian Federation  n Federation for Cooperation on Enhancing the Safe
Title:  Comment: 6/13/1995  Title: Comment: 3/12/2003  Title: Comment:	10/1/2002  Appendix Description of Phenomena of Russian  Agreement of Russian  Agreement Atomic Energy Scholer of Cheleznogo	Expired  Expired  between the Nuclear Fuel  In Force  between the rgy Concernings (Krasnoy	g Arrangement #1 of Welded Tuffs  Primary DOE  U.S. Department of Cycle Facillities and Primary DOE  Department of Energy the Cessation of	True Energy and Research True gy of the t	Department of E  of the Federal Nuclei Reactors  United States of A	Welded Tuffs Energy/Russian Academy of Sciences Memorandus Arms Control and Nonproliferation Clear and Radiation Safety Authority of the Russian America and the Ministry of the Russian Federation	Russian Academy of Sciences MOU  m of Understanding Uranium Mass Transport  Agreement between DOE and the Federal Russian Federation  n Federation for Cooperation on Enhancing the Saf

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:			en the Saudi Arabia t of Treasury, Jointl				istry of Finance and National Economy, Jointly, and the
Comment:							
7/21/1993	7/21/1997	Completed	Secondary DOE	False	Primary DOE	Energy Efficiency and Renewable Energy	Annex 2: Assessment of Solar Radiation Resources
	Technology	and the Minis	stry of Finance and	National	Economy of the K	lingdom of Saudi Arabia	America and the Kind Abdulaziz City for Science and
Comment:	Improve the	assessment of	solar radiation resou	rces in Sa	<u>ıudi Arabia by upgı</u>	ading surface measurements and by developing co	orrelation between surface and satellite data.
2/9/1994	2/9/1996	-	Secondary DOE	Faise	•	Energy Efficiency and Renewable Energy	Annex 3 - Assessment of Geothermal Energy Resources
Title:	Annex III to Technology	the Agreemer and the Minis	nt between the Depa stry of Finance and	artment o National	f Energy and the i Economy of the K	Department of the Treasury of the United States lingdom of Saudi Arabia	of America and the King Abdulaziz City for Science and
Comment:						di Arabia involving a review of existing studies and mmendations for follow-on activities.	reports, development of an annotated list of potential sites
2/1/1987	2/13/1995	Expired	Primary DOE	False		Energy Research and Development	Renewable Energy R&D
Title:	of Finance a	nd National E	ates Joint Commiss Economy Kingdom ( yy Research and De	of Saudi A	\rabia and the De	tion Project Agreement between the King Abdu partment of Energy and the Department of the T	laziz City for Science and Technology and the Ministry Treasury United States of America for Cooperation in the
Comment:	Joint R&D pr	ojects in renev	vable energy fields if	mutual int	erest.		
Country: \$	Senegal						
4/2/1998	•	In Force	Statement of Intent	False		Energy Research and Development	SOI - Energy R&D
Title:	Memorandu and Develo		anding between the	Republic	of Senegal and t	he United States of America for Cooperation on	Energy Policy, Science and Technology, and Research
Comment:							
3/19/1999	3/19/2004	In Force	Primary DOE	True		Energy Research and Development	Energy Policy, S and T, and R and D
Title:			Department of Energ and Development	gy and the	Ministry of Ener	gy, Mines and Industry of the Republic of Sene	gal on Cooperation in Energy Policy, Science and
Comment:	The objective	of this Agree	ment is to facilitate a	nd establis	h cooperative active	vities by the Parties.	
Country: 9	South Afric	a					
12/4/1997	12/4/2022	In Force	Intergovernmental	True		Nuclear Energy	Peaceful Uses of Nuclear Energy
Title:	Agreement	for Cooperation	on between the Uni	ted States	of America and	the Republic of South Africa Concerning Peace	ful Uses of Nuclear Energy
Comment:						nergy which must be undertaken with a view to profied by exchange of diplomatic notes on 12/4/97.	otecting the international environment from radioactive,
8/25/1995		In Force	Statement of Intent	False		Information and/or Personnel Exchange	Energy Information Exchange
Title:		nent of Intent ly Information		ment of E	Energy of the Unit	ed States of American and the Department of M	lineral and Energy Affairs of the Republic of South Africa
Comment:							
8/25/1995		In Force	Statement of Intent			Energy Research and Development	Energy Policy, S&T and Development
Title:			between the Depart e and Technology,			ed States of American and the Department of M	lineral and Energy Affairs of the Republic of South Africa
	Facilitate joir				elopment and com	mercialization in an environmentally and economic	
8/25/1995		In Force	Statement of Intent			Energy Efficiency and Renewable Energy	Renewable Energy (Guguletu Township)
	of Energy N	ational Labor	atories, and the Gu	guletu RD	P Forum	nent in Guguletu Township between the United	States Department of Energy, United States Department
Comment:	Establishme	nt of a light ind	ustrial part in Gugule	tu Townsl	nip.		
8/25/1995		In Force	Statement of Intent	False		Energy Efficiency and Renewable Energy	Renewable Energy (The Csir, South Africa)

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	al Agreem			T			
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Statement o (Council for	f Intent on Re Scientific and	newable Energy Te I Industrial Researd	chnologie h), Repul	es between the National South Africa	tional Renewable Energy Laboratory, U.S.A. an	d Sandia national Laboratories, U.S.A. and the CSIR
Comment:	NREL and Sa with The Csir	andia, by being , Republic of S	signatories of this S South Africa. Witness	Statement, sed by Sec	have agreed to exc cretary O'Leary.	hange experience and views on opportunities for t	he appropriate utilization of renewable energy technologies
12/5/1995		In Force	Statement of Intent	False		Fossil Energy	Mitigation of Greenhouse Gases
Title:	Statement o States of An		rning Cooperation	in Sustair	nable Energy Deve	lopment and the Mitigation of Greenhouse gas	es between the Republic of South Africa and the United
Comment:	removal by s	inks in an envi	ronmentally sound ar	nd socially	and economically e	uld achieve additional mitigation of climate change equitable fashion through deployment of greenhous of natural carbon sinks, etc.	by addressing anthropogenic emissions by sources and se gas mitigation technologies; education/training programs;
12/5/1995		In Force	Statement of Intent	False		Energy Research and Development	South Africa/Provincial Gov'ts Cooperation Agreement - Statement of Intent
Title:	Cooperative	Agreement b	etween Provincial (	Governme	nts of the Republi	ic of South Africa on Regional Cooperation in E	nergy
Comment:						energy development in an environmentally and ed ince; Eastern Cape Province	conomically sound way with the following provincial
8/25/1995		In Force	Primary DOE	False		Energy Research and Development	Sustainable Energy Development Committee
Title:	: Terms of Re	ference on th	e Sustainable Energ	gy Develo	pment Committee	of the U.S South Africa Binational Commissi	ion
Comment:	•						
8/25/1995		In Force	Primary DOE	False		Energy Efficiency and Renewable Energy	Renewable and Energy Efficiency Technologies
Title:	. Memorandu	m of Underst	anding				
Comment:	: Promotion of (w/USAID as		ergy and energy effic	cient techn	ologies as a cost-ef	fective means of increasing access to energy of th	e majority of South Africa disadvantaged population
8/25/1995		In Force	Primary DOE	False		Energy Efficiency and Renewable Energy	Electrification of Rural Clinics (Cape Town)
Title:	: Memorandu South Africa		anding between Sar	ndia Natio	nal Laboratories o	of Albuquerque New Mexico, USA and the Indep	pendent Development Trust Cape Town, Republic of
Comment:		nal Lab, as sig utual consent.	natory of this MOU,	has agree	to co-fund the Inde	ependent Development Trust model clinic electrific	ation program and to provide other technical assistance as
12/5/1995	12/5/2000	In Force	Primary DOE	True		Energy Research and Development	Energy Policy, S&T and Development
Title:			between the United ogy and Developme		epartment of Ener	gy and the Department of Mineral and Energy /	Affairs of South Africa on Collaboration on Energy,
Comment:						ology, development and commercialization activitien environment enhancing energy technologies; and p	s in such areas as: fossil energy, including clean coal; rivate power project development
8/25/1995			Primary DOE	False		Energy Research and Development	Sustainable Development Resource Center
Title:	: Memorandu Developmei	m of Underst at on Creating	anding between the the Sustainable De	World W	ildlife Fund-South nt Resource Cente	Africa, EarthKind International, U.S. Departmen	nt of Energy and U.S. Agency for International
Comment						advance policies and programs on the use of rene . Other signatories are EarthKind Intl (Jan Hartke	ewable energy and energy efficiency technologies and ) and USAID (Larry Byrne)
Country:	Spain						
12/12/1985		in Force	Primary DOE	True		Science and Technology	Science & Technology
Title:	: Agreement	between the U	Inited States Depar	tment of l	nergy and the Un	ited States-Spain Joint Committee for Scientific	c and Technological Cooperation
Comment			uidelines and proced tee for S&T Coopera		valuating, funding a	nd coordinating research proposals, projects and r	elated activities in the field of energy selected and funded b
9/15/1997	9/15/2007	In Force	Primary DOE	True		Environmental Safety Health	Research on Radiological Evaluations
Title	: Implementii Cooperatioi	ng Arrangeme n in Research	nt between the Dep on Radiological Ev	artment o aluations	f Energy of the Un	nited States of America and the Ministry of Indu	stry and Energy of the Kingdom of Spain on
Comment	:						
12/16/1985	12/31/1988	Completed	Primary DOE	False		Fusion Energy	Magnetic Fusion

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tart Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:						nited States and the U.SSpain Joint Committee	e for Scientific and Technological Cooperation in
Comment:	•	in the Field	of Toriadal Confine	nent Devi	ICO I J-II		
6/6/1986	6/30/1991	Expired	Primary DOE	False		Energy Research and Development	Energy R&D
		•	•		tates Departmen		Nuclear for Cooperation in Energy Research and
	Developmen		•		••	,	•
	Description n						
	12/16/1997	Expired	Primary DOE	True		Civilian Radioactive Waste Management	Radioactive Waste Management
	-						tivos, S.A. in the Field of Radioactive Waste Managemen
					astes and other m	utually agreed topics associated with the manager	
5/10/1979	12/31/1982	Expired	Primary DOE	False	40 d C404 D	Energy Efficiency and Renewable Energy	Solar Energy - Ministry of Industry and Energy
ı itle:	and Applicat		Agreement betwee	n the Uni	ted States Depart	unent of Energy and the Spanish Ministry of Ind	dustry and Energy in the Field of Solar Energy Research
Comment:	: Description n	ot available in	History				
10/22/1979	12/31/1982	Expired	Primary DOE	False		Energy Efficiency and Renewable Energy	Solar Energy - Institute for Aerospace Technoloy
Title:		norandum of earch and Ap		n the Uni	ted States Depar	tment of Energy and the Spanish National Instit	tute for Aeropsace Technology in the Field of Solar
Comment	<u>.                                    </u>				· · · · · · · · · · · · · · · · · · ·		
9/15/1997	9/15/2007	In Force	Secondary DOE	True	Primary DOE	Environmental Safety Health	Annex 1
Title:	: Project Anne	ex 1 - cooper	ation on research ir	radiolog	ical evaluations		
Comment	: Related to rac	dioactive was	te management.				
6/6/1986	6/30/1991	Expired	Primary DOE	False		Fossil Energy	Coal Liquefaction/ Geothermal Energy
Title:	: Memorandui Developmen		tanding between the	United S	tates Departmen	t of Energy and the Spanish Instituto Geologici	o Y Minero for Cooperation in Energy Research and
Comment	: Description n	ot available in	History				
11/18/1986	12/31/1989	Expired	Secondary DOE	False	Primary DOE	Nuclear Energy	Mesons and Quarks in Nuclei
Title	: Annex XI to and Quarks		nt between the Dep	artment o	f Energy of the U	Inited States and the U.SSpain Joint Committe	ee for Scientific and Technological cooperation in Meson
Comment	: Description n	ot available in					
12/16/1985		Expired	Secondary DOE		Primary DOE	Nuclear Energy	Light Water Reactor Safety
Title	: Annex I to th Exchange of	e Agreemen Information	t between the Depai and Personnel in th	rtment of ne Area of	Energy of the Ur f Probabilities Ris	ited States and the U.SSpain Joint Committee sk Assessments for Light Water Reactors	for Scientific and Technological Cooperation in
Comment	: Description n	ot available ir	History				
10/27/1986		Expired	Secondary DOE		Primary DOE	Nuclear Energy	Annex IV - Electron-Positron Collision Interactions
Title	: Annex IV to Field of Elec	the Agreeme tron-Positio	nt between the Dep n Collision Interaction	artment o ons	f Energy of the U	Inited States and the U.SSpain Joint Committe	ee for Scientific and Technological Cooperation in the
Comment	: Description n	ot a <u>vailable ir</u>	History				
7/15/2000	7/15/2006	In Force	•	True		Energy Research and Development	MOU for Energy Cooperation
Title		m of Underst Cooperation		e Ministry	of Science and	Technology of the Kingdom of Spain and The E	Pepartment of Energy of the United States of America
Comment	:						
	Sweden						
Country:	Owcacii						

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	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Cooperation	is directed tow	ards a study of mutu	ally agree	d topics associate	d with the management of radioactive waste and re	elated activities of the nuclear fuel cycle.
2/11/1988		In Force	Primary DOE	True		Classified	Subject and Umbrella contents are classified
Title:	Subject and	Umbrella coi	ntents are classified	1			
Comment:	Description n	ot available in	History				
7/1/1977	7/1/1980	Expired	Primary DOE	True		Environmental Restoration and Waste Management	Radioactive Waste Storage
Title:	Agreement l Geological l		A and the Swedish	Nuclear F	Fuel and Waste M	anagement Company Concerning a Cooperativ	re Program on Radioactive Waste Storage in Deep
Comment:	Field testing	relative to mea	suring fluid moveme	nt through	fractures in grani	te rock in order to assess suitability of granite for te	erminal storage
12/16/1992	12/16/1997	Expired	Secondary DOE	True	Primary DOE	Civilian Radioactive Waste Management	Site Characterization & Repository Performance
Title:	U.S. Departi	ment of Energ	y - Sweden project	agreeme	nt in the areas of	site characterization and repository performan	nce
Comment:			I project concerning rily from the SKB As				and (4) geochemistry on the basis of data and other
10/23/1995	10/23/2000	In Force	Primary DOE	True		Civilian Radioactive Waste Management	Radioactive Waste Management
Title:		between the l ive waste Mar		tment of l	Energy and the S	wedish Nuclear Fuel and Waste Management C	Company Concerning a Cooperative Program in the Fiel
Comment:							
5/24/2004	5/24/2009	In Force	Primary DOE	True		Civilian Radioactive Waste Management	MOU bet. DOE and the Swedish - Radioactive Wast Material
			anding between the e Program in the Fi				Nuclear Fuel and Waste Management Company
Comment:	Concerning	a Cooperativ					Nuclear Fuel and Waste Management Company
Comment:	Concerning Switzerland	a Cooperativ d	e Program in the Fi	eld of Rad		flanagement	
Comment: Country: \$	Concerning Switzerland 11/30/1991	d Expired	e Program in the Fi	eld of Rad	dioactive Waste M	Management  Nuclear Energy	Carbide Fuel Development
Comment: Country: \$ 11/15/1982 Title:	Switzerland 11/30/1991 Agreement	a Cooperativ  d  Expired between the U	e Program in the Fi Primary DOE United States Depar	True	Energy and the S	Management  Nuclear Energy  wiss Federal Institute of Reactor Research in the	Carbide Fuel Development
Comment: Country: \$ 11/15/1982 Title: Comment:	Switzerland 11/30/1991 Agreement	d Expired between the to an examination	e Program in the Fi Primary DOE Inited States Depar	True tment of intation of r	Energy and the S	Management  Nuclear Energy  wiss Federal Institute of Reactor Research in the state of the second completed.	Carbide Fuel Development he area of Carbide Fuel Development
Comment: 11/15/1982 Title: Comment: 6/13/1989	Switzerland 11/30/1991 Agreement of Postirradiation 6/13/1992	d  Expired between the Unexpired Expired	Primary DOE  Jnited States Depar phase and document Primary DOE	True tment of r	dioactive Waste M Energy and the S results and evalua	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy	Carbide Fuel Development he area of Carbide Fuel Development  Nuclear Plant Life Extension Research
Comment: 11/15/1982 Title: Comment: 6/13/1989 Title:	Switzerland 11/30/1991 Agreement of the control of	d Expired between the ton examination Expired between the ton in Nuclear P	Primary DOE  Inited States Depar phase and document Primary DOE  Inited States Depar Juited States Depar lant Life Extension	True  true true of trutation of related truth	Energy and the S results and evalua Energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy	Carbide Fuel Development he area of Carbide Fuel Development
Comment: \$11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 6/13/1989	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r	d Expired between the Unexpired Expired between the Unexpired between the Unexpired between the Unexpired	Primary DOE  Jnited States Depar phase and document Primary DOE  Jnited States Depar Jnited States Depar Juited States Depar	True true truent of intation of r False truent of i	Energy and the S results and evalua Energy and the S	Management  Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed.  Nuclear Energy wiss Confederation Represented by the Paul Se	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on
Comment: 11/15/1982 11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002	d Expired between the ton examination Expired between the ton in Nuclear P not available in In Force	Primary DOE  Jnited States Depart phase and document Primary DOE  Jnited States Depart Jnited States Depart Jnant Life Extension History Primary DOE	True tment of I ntation of r False tment of I Research	Energy and the S results and evalua Energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Security Civilian Radioactive Waste Management	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management
Comment: \$11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title:	Switzerland 11/30/1991 Agreement of 6/13/1992 Agreement of Cooperation Description of 12/23/2002 Agreement of Radioactive	d Expired between the light of the examination Expired between the light of the examination Expired between the light of the examination In Force between the light of the examination	Primary DOE  Inited States Depart phase and document Primary DOE  Inited States Depart Inited	True tment of I ntation of r False tment of I Research	Energy and the S results and evalua Energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Security Civilian Radioactive Waste Management	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on
Comment: 11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment:	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension	d Expired between the ton examination Expired between the ton in Nuclear P not available in In Force between the ton t	Primary DOE  Jnited States Depart phase and document Primary DOE  Jnited States Depart Jnited	True tment of intation of r False tment of interest o	Energy and the S results and evalua Energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Security Civilian Radioactive Waste Management America and the National Cooperative for the Desire Security Se	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management  sisposal of Radioactive Waste in Switzerland in the Field
Comment: Country: \$ 11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment: 4/10/1981	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension 8/2/1982	d Expired between the U on examination Expired between the U on in Nuclear P not available in In Force between the U Waste Manag on for 5 yr. Per Expired	Primary DOE  Jnited States Depare phase and document Primary DOE  Jnited States Deparement Junit Life Extension  History  Primary DOE  Department of Energy  Primary DOE  Primary DOE  Primary DOE	True tment of I ntation of r False tment of Research True gy of the	Energy and the S results and evalua Energy and the S n United States of	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Security Civilian Radioactive Waste Management America and the National Cooperative for the Description.	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management  disposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development
Comment: Country: \$11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment: 4/10/1981 Title:	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension 8/2/1982	d Expired between the U on examination Expired between the U on in Nuclear P not available in In Force between the U Waste Manag on for 5 yr. Per Expired	Primary DOE  Jnited States Depare phase and document Primary DOE  Jnited States Deparement Junit Life Extension  History  Primary DOE  Department of Energy  Primary DOE  Primary DOE  Primary DOE	True tment of I ntation of r False tment of Research True gy of the	Energy and the S results and evalua Energy and the S n United States of	Nuclear Energy wiss Federal Institute of Reactor Research in the tion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Security Civilian Radioactive Waste Management America and the National Cooperative for the Desire Security Se	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management  disposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development
Comment: Country: \$ 11/15/1982 Title: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment: 4/10/1981 Title: Comment:	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation 12/23/2002 Agreement Radioactive Auto extensio 8/2/1982 Agreement	d Expired between the U on examination Expired between the U on in Nuclear P not available in In Force between the U Waste Manag on for 5 yr. Pet Expired between the U	Primary DOE  United States Depart phase and document primary DOE  United States Depart Primary DOE Department of Energement Primary DOE  United States Depart  United States Depart  United States Depart	True truent of intation of r False truent of interest	Energy and the S results and evalua Energy and the S United States of a	Nuclear Energy wiss Federal Institute of Reactor Research in the stion to be completed. Nuclear Energy wiss Confederation Represented by the Paul Science Civilian Radioactive Waste Management America and the National Cooperative for the D Nuclear Energy wiss Federal Institute for Reactor Research in the Science Cooperative for the Science Cooperative for the D	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management  disposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development  the Area of Carbide Fuel Development
Comment: Country: \$11/15/1982     Title: Comment: 6/13/1989     Title: Comment: 12/23/1997     Title: Comment: 4/10/1981     Title: Comment: 2/14/1986	Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension 8/2/1982 Agreement 6/30/1986 Project Agree	a Cooperative  Expired between the Conneximination Expired between the Conneximination Expired between the Conneximination In Force between the County Expired between the County Expired Expired Expired	Primary DOE  Jnited States Depart phase and document phase and document of Energy Primary DOE  Department of Energy Primary DOE  Department of Energy Primary DOE  Jnited States Department of Energy Primary DOE  Jnited States Department of Energy DOE  Jnited States Department of Energy DOE  Jnited States Department DOE  Joen the United States	True truent of intation of r False truent of interest	Energy and the S results and evalua Energy and the S United States of A energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the stion to be completed. Nuclear Energy wiss Confederation Represented by the Paul State Civilian Radioactive Waste Management America and the National Cooperative for the D Nuclear Energy wiss Federal Institute for Reactor Research in the Civilian Radioactive Waste Management	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research  cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management  disposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development
Comment: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment: 4/10/1981 Title: Comment: 2/14/1986 Title:	Concerning  Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension 8/2/1982 Agreement 6/30/1986 Project Agrefield of Frace	a Cooperative  Expired between the Context expired between the Context expired between the Context expired In Force between the Context expired Expired Expired Expired Expired Expired Expired Expired Expired	Primary DOE  United States Depart phase and document Primary DOE  United States Department States Department of Energement Primary DOE  United States Department of Energement Primary DOE  United States Department Secondary DOE  United States Department the United States Department Poem the United States Departm	True truent of intation of r False truent of interest	Energy and the S results and evalua Energy and the S United States of A energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the stion to be completed. Nuclear Energy wiss Confederation Represented by the Paul State Civilian Radioactive Waste Management America and the National Cooperative for the D Nuclear Energy wiss Federal Institute for Reactor Research in the Civilian Radioactive Waste Management	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management tisposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development the Area of Carbide Fuel Development  Fracture Hydrology
Comment: Comment: 6/13/1989 Title: Comment: 12/23/1997 Title: Comment: 4/10/1981 Title: Comment: 2/14/1986 Title:	Concerning  Switzerland 11/30/1991 Agreement Postirradiatio 6/13/1992 Agreement Cooperation Description r 12/23/2002 Agreement Radioactive Auto extension 8/2/1982 Agreement 6/30/1986 Project Agrefield of Frace	a Cooperative  Expired between the Con examination Expired between the Con in Nuclear Poot available in In Force between the Con Waste Managon for 5 yr. Per Expired between the Company the Control of t	Primary DOE  United States Depart phase and document Primary DOE  United States Department States Department of Energement Primary DOE  United States Department of Energement Primary DOE  United States Department Secondary DOE  United States Department the United States Department Poem the United States Departm	True truent of intation of r False truent of interest	Energy and the S results and evalua Energy and the S United States of A energy and the S	Nuclear Energy wiss Federal Institute of Reactor Research in the stion to be completed. Nuclear Energy wiss Confederation Represented by the Paul State Civilian Radioactive Waste Management America and the National Cooperative for the D Nuclear Energy wiss Federal Institute for Reactor Research in the Civilian Radioactive Waste Management	Carbide Fuel Development  the area of Carbide Fuel Development  Nuclear Plant Life Extension Research cherrer Institute, 5232 Villigen PSI, Switzerland on  Radioactive Waste Management disposal of Radioactive Waste in Switzerland in the Field  Carbide Fuel Development the Area of Carbide Fuel Development  Fracture Hydrology

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Comment:  10/31/2003 Title: Agreement Advance Comment: Comment: Comment: Comment: Comment: Agreement Agreement Advance Comment: C	Expired expired expired expired experient III be experient for it in Force between the ems Techno In Force between the expired expired in Force between the expired ex	Expired Primary DOE ween the United States Dep ment y agreed topics associated wi Expired Secondary DOE ent III between the United Serization, Repository Perfor work for joint research on: (1) specific models on data collect In Force Primary DOE ween the Department of Ene Technologies  In Force Intergovernment ween the Taipei Economic a Power Systems Technologic In Force Primary DOE	Binding True partment of with the mana True States Departmente, Va optimizatio ction; and (4) True ergy of the al True and Cultura	Energy and the I agement of radioa Primary DOE artment of Energy lidation, and Sor n of site character derivation of bul United States of	Civilian Radioactive Waste Management by and the National Cooperative for the Storage ption rization methods; (2) improved understanding of slk sorption parameters of radionuclides on natural formation and the American Institute in Taiwan	Radioactive Waste Management active Waste in Switzerland in the Field of Radioactive rel cycle. VISITS AND ASSIGNMENTS: Yes DURATION: To Site Char., Repository Performance, Validation of Radioactive Waste in Switzerland (NAGRA) in the areas pecific key processes which determine repository performance rocks and validation of transport models.  Agreement bet. DOE and AIT of for Technical Cooperation in Clean Coal and Advanced  Agreement bet. TECRO and AIT Institute in Taiwan for Technical Cooperation in Clean Coal
Title: Agreement Waste Mana Comment: Study of mut Be Determing 9/23/1991 9/23/1996 Title: Project Agree of Site Char Comment: Provide a fra (3) validation Country: Taiwan 2/3/2004 Title: Agreement Power Syste Comment: 10/31/2003 Title: Agreement and Advance Comment: Comment: Comment: Open ended 3/20/1997 Title: Arrangement Thailand an Comment: Open ended 3/6/2000 Title: Action Sheet Comment: Country: Turkey 3/20/2002 3/20/2007 Title: Implementing Cooperation Comment: 3/20/2002 3/20/2002 Title: Annex 2 to	Expired for inforce for specific r  In Force expired In Force for specific r  In Force expired for specific r  In Force	ween the United States Depinent y agreed topics associated wite Expired Secondary DOE went III between the United Statistion, Repository Perfor work for joint research on: (1) specific models on data collect In Force Primary DOE ween the Department of Energy Technologies  In Force Intergovernment ween the Taipei Economic a Power Systems Technologie In Force Primary DOE	True States Deparmance, Va ) optimizatio ction; and (4  True ergy of the  al True and Culturalies	Primary DOE artment of Energy lidation, and Sor, n of site character d) derivation of bul  United States of	National Cooperative for the Storage of Radioa active waste and related activities of the nuclear further Civilian Radioactive Waste Management by and the National Cooperative for the Storage retion rization methods; (2) improved understanding of silk sorption parameters of radionuclides on natural for America and the American Institute in Taiwan	set cycle. VISITS AND ASSIGNMENTS: Yes DURATION: To Site Char., Repository Performance, Validation of Radioactive Waste in Switzerland (NAGRA) in the areas pecific key processes which determine repository performance rocks and validation of transport models.  Agreement bet. DOE and AIT  of for Technical Cooperation in Clean Coal and Advanced
Comment:  7/23/1991  9/23/1996  Title: Project Agree of Site Char  Comment: Provide a fra (3) validation  Country: Taiwan  2/3/2004  Title: Agreement Power Syste  Comment:  10/31/2003  Title: Agreement and Advance  Comment:  Comment: Open ended  3/6/2000  Title: Action Shee  Comment:  Country: Turkey  3/20/2002  3/20/2002  Title: Implementing  Cooperation  Comment:  3/20/2002  3/20/2002  Title: Annex 2 to	Expired expired expired expired experient III be experient for it in Force between the ems Techno In Force between the expired expired in Force between the expired ex	enent y agreed topics associated with Expired Secondary DOE ent III between the United Serization, Repository Perfor work for joint research on: (1) specific models on data collect In Force Primary DOE ween the Department of Energy Technologies  In Force Intergovernment ween the Taipei Economic a Power Systems Technologic In Force Primary DOE	True States Deparmance, Va ) optimizatio ction; and (4  True ergy of the al True and Culturalies	Primary DOE artment of Energy lidation, and Sor, n of site character d) derivation of bul  United States of	Civilian Radioactive Waste Management by and the National Cooperative for the Storage ption rization methods; (2) improved understanding of slk sorption parameters of radionuclides on natural formation and the American Institute in Taiwan	Site Char., Repository Performance, Validation of Radioactive Waste in Switzerland (NAGRA) in the areas pecific key processes which determine repository performance rocks and validation of transport models.  Agreement bet. DOE and AIT  for Technical Cooperation in Clean Coal and Advanced  Agreement bet. TECRO and AIT
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2/3/2004 Title: Agreement Power System  Comment:  10/31/2003 Title: Agreement and Advance Comment:  Country: Thailand 3/20/1997 Title: Arrangement Thailand and Comment: Open ended 3/6/2000 Title: Action Sheet Comment:  Country: Turkey 3/20/2002 3/20/2007 Title: Implementing Cooperation Comment:  3/20/2002 3/20/2002 Title: Annex 2 to	In Force between the	In Force Primary DOE	ergy of the  al True  and Cultura			for Technical Cooperation in Clean Coal and Advanced  Agreement bet. TECRO and AIT
Title: Agreement Power System  Comment:  10/31/2003 Title: Agreement and Advance Comment:  Country: Thailand 3/20/1997 Title: Arrangement Thailand an Comment: Open ended 3/6/2000 Title: Action Sheet Comment:  Country: Turkey 3/20/2002 3/20/2007 Title: Implementing Cooperation Comment:  3/20/2002 3/20/2002 Title: Annex 2 to	In Force between the	In Force Primary DOE	ergy of the  al True  and Cultura			for Technical Cooperation in Clean Coal and Advanced  Agreement bet. TECRO and AIT
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and Advance Comment:  Country: Thailand 3/20/1997 Title: Arrangement Thailand an Comment: Open ended 3/6/2000 Title: Action Sheet Comment:  Country: Turkey 3/20/2002 3/20/2007 Title: Implementin Cooperation Comment: 3/20/2002 3/20/2002 Title: Annex 2 to	ed Power S	Power Systems Technologi	ies 	al Representative	e Office in the United States and the American	Institute in Taiwan for Technical Cooperation in Clean Coa
Country: Thailand 3/20/1997 Title: Arrangement Thailand an Comment: Open ended 3/6/2000 Title: Action Sheet Comment:  Country: Turkey 3/20/2002 3/20/2007 Title: Implementing Cooperation Comment: 3/20/2002 3/20/2002 Title: Annex 2 to	In Force	•	False			
3/20/1997	In Force	•	False			
Title: Arrangement Thailand an Comment: Open ended 3/6/2000 Title: Action Shee Comment: Country: Turkey 3/20/2002 3/20/2007 Title: Implementing Cooperation Comment: 3/20/2002 3/20/2002 Title: Annex 2 to 1	In Force	•	False			
Thailand an					Arms Control and Nonproliferation	Lab-to-Lab arrangement
3/6/2000  Title: Action Shee Comment:  Country: Turkey 3/20/2002 3/20/2007  Title: Implementic Cooperation Comment: 3/20/2002 3/20/2002  Title: Annex 2 to	d the United	er the Exchange of Technica e United States Departmen	al Informati nt of Energy	ion and for Coop /	peration in the Field of Peaceful Uses of Nuclea	ar Energy between the Office of Atomic Energy for Peace o
Title: Action Shee Comment:  Country: Turkey  3/20/2002				<b>D</b> : DOE		
Comment:		In Force Secondary DOE		Primary DOE	Arms Control and Nonproliferation	Action Sheet 1 - Preliminary Safety Anaysis Report
3/20/2002 3/20/2007  Title: Implementing Cooperation  Comment:  3/20/2002 3/20/2002  Title: Annex 2 to	et 1 betweer	between the Office of Atom	nic Energy i	for Peace of Thai	iland and the United States Department of Ene	rgy for Preliminary Safety Analysis Report Review
Title: Implementic Cooperation  Comment:  3/20/2002 3/20/2002  Title: Annex 2 to 1						
Cooperation Comment:  3/20/2002 3/20/2002  Title: Annex 2 to	In Force	In Force Primary DOE	True		Science and Technology	Cooperation in Energy Technology
3/20/2002 3/20/2002 Title: <i>Annex 2 to</i>		Arrangement between the D Energy Technology	epartment)	of Energy of the	United States of America and the Ministry of E	Energy and Natural Resources of the Republic of Turkey fo
Title: Annex 2 to						
	In Force	In Force Secondary DOE	True	Primary DOE	Science and Technology	Annex 2 - Cooperation in the Field of Coal and Power Systems
Republic of		Implementing Arrangement key for Cooperation in the				the Ministry of Energy and Natural Resources of the
Comment:						
Country: USSR						
6/28/1974		Expired Intergovernmenta	al True		Energy Research and Development	Non-Nuclear Energy
•	Expired	ween the United States of A	America an	d the Union of Sc	oviet Socialist Republics of Cooperation in the	Field of Energy
Comment: Description r 9/28/1972	Between the					

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title	Energy purs	m on coopers suant to the A d other fields	greement between	uses of	atomic energy bet d States of Americ	ween the U.S. Atomic Energy Commission ar a and the Union of Soviet Socialist Republics	nd the USSR State Committee for the Utilization of Atomic s on exchanges in the scientific, technical, educational,
Comment	Description r	ot available in	History				
10/8/1974		Expired	Primary DOE	False		Nuclear Energy	Fast Breeder Reactors
Title	Protocol on Energy	Cooperation	in the Field of Fast	Neutron I	Breeder-Reactors	between the U.S. Atomic Energy Commission	n and the USSR State Committee for Utilization of Atomic
Comment	under USA-l	JSSR Peacefu	I Uses of Atomic Ene	rgy Agree	ment of June 21, 19	973	
Country:	Ukraine						
4/8/1994		In Force	Statement of Intent	False		Nuclear Energy	Shutdown Chernobyl Nuclear Power Plant
Title	Joint Stater	nent About Pa	aths to the Soonest	Possible	Shutdown of the	Chernobyl Nuclear Power Plant	
Comment	: Undertake n	ear-term joint a	analysis of options for	earliest p	ossible closure of t	he Chernobyl power plant.	
10/23/1993	10/23/1998	Expired	Intergovernmental	True		Nuclear Safety	Nuclear Safety
Title			Government of the U lations for Civilian I				perational Safety Enhancements, Risk Reduction Measures
Comment	:						
4/26/1996		In Force	Intergovernmental	False		Radioactive Waste	Chornobly Center
Title: Comment:		m of Underst	anding on Participa	tion In an	d Support of the A	Activities of the International Chornobyl Cent	er on Nuclear Safety, Radioactive Waste and Radioecology
7/22/1998	7/22/2003	In Force	Intergovernmental	True		Radioactive Waste	Int'l Radioecology Lab
	Internationa	il Chornobly	Center on Nuclear S	Inited Sta afety, Rad	ites of America an dioactive Waste ar	d the Government of Ukraine Concerning the nd Radioecology	e International Radioecology Laboratory of the
5/6/1998	5/4/2028	In Force	e Executive Agent Intergovernmental	True		Nuclear Energy	US-Ukraine PNC
			•		of Amorica and I	Jkraine Concerning Peaceful Uses of Nuclear	
Comment	•	тог осорегал	on between the one	eu otate.	or America and c	Arama Concerning I cacerar Oses of Nacical	Enorgy
3/4/1994	3/4/1999	Completed	Intergovernmental	True		Science and Technology	US-Ukraine S&T Agreement
		•	· ·		ites of America an	d the Government of Ukraine on Science and	
Comment	•	bottoon and		Jimou ou	nes or America an		Transfer desperation
	United Kin	adom					
9/5/1996	Omea Kiii	In Force	Statement of Intent	False		Environmental Restoration and Waste Management	Environmental Restoration and Waste Management
Title	· Statement o	of Intent betwe	een the United State	s Departi	ment of Energy an	d the United Kingdom Department of Trade a	and Industry
				-	••	, packaging, disposal of aluminum-based spent	-
7/25/1995	. Ediabilon ila	In Force	Statement of Intent		es for the treatment	Environmental Restoration and Waste	Nuclear Clean-Up
	· Heads of A				ited States Departs	Management	artment of Trade and Industry on their Perspective
715		Nuclear Clea					
Comment	: Cooperate, t	hrough sharin	g of information, on si	milar issu	es associated with	nuclear decommissioning and clean-up	
3/1/1985	3/1/1993	Expired	Primary DOE	True		Environmental Restoration and Waste Management	Decommissioning Nuclear Facilities
Title	: Reciprocal	Agreement be	etween the United S	tates Dep	artment of Energy	and the United Kingdom Atomic Energy Aut	thority in the field of Decommissioning Nuclear Facilities
Comment	: Exchange of	Decommissio	ning Technology and	Experien	ce		
10/30/1986	10/31/1991	Expired	Primary DOE	True		Civilian Radioactive Waste Management	Radioactive Waste Management Technology
10/30/1986							

Title: Agr	Date	Status					
-			Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment: Coo	eement be	etween the U.	.S. Department of E	nergy an	d the United Kingo	lom Atomic Energy Authority in the field of Radio	active Waste Management Technology
	perate and	d exchange te	chnology associated	with the r	management of radi	oactive waste	
8/26/1988 8/2	26/1998	Completed	Primary DOE	True		Nuclear Energy	Gas Cooled Reactor Graphite Technology
			ge of Information in antral Electricity Ge				partment of Energy and the United Kingdom Atomic
Comment: Esta mod	ablish a red lels and da	ciprocal, balan ata; graphite si	ced information exc trength data; and gra	hange and aphite pro	d collaboration on ga babilistic risk assess	as-cooled reactor graphite technology in cooperative ment methodology.	areas such as graphite creep data; graphite fracture
9/12/1958		Completed	Primary DOE	False		Energy Research and Development	Fusion Energy
Title: Exc	hange of	Letters to imp	prove collaboration	n in the re	search field		
	ntified five a		est: 1) Basic research	h in gener	al and controlled the	ermonuclear reactions; 2) Uranium oxide fuels; 3) Ga	s coolant compatibility; 4) Beryllium; and 5) Plutonium
12/2/1969 12	/1/1976	Expired	Primary DOE	False		Information and/or Personnel Exchange	Exchange Nuclear S&T Information
Title: <i>Men</i> <i>Nuc</i>	norandun :lear Sciei	n of Understa nce and Tech	nding between the nology Information	United S	tates Atomic Energ	y Commission and the United Kingdom Atomic I	Energy Authority for Cooperation in the Exchange of
Comment: Coo	perate in t	he promoting	effective disseminat	ion of S&T	information in the r	nuclear field	
8/28/1975		Expired	Primary DOE	False		Fossil Energy	Coal R&D
						erms for Exchanges of Information between the U ndon, S.W. 7AE, England	nited States Department of the Interior, Washington,
Comment: Exc	hange of li	nformation	Agreement originally	<u>between</u>	Department of Inter	ior and UK National Coal Board. Interior requested	ERDA participation in 1975
9/20/1976 9/2	20/1991	Expired	Primary DOE	True		Nuclear Energy	Fast Breeder Reactors
Title: Agr	eement b	etween the U.	.S. Department of E	nergy an	d the United Kingo	lom Atomic Energy Authority in the field of liquid	metal-cooled fast breeder reactors
Comment: Exc	hange of L	MFBR techno	logy and data				
10/18/1984 4/3	30/1990	Expired	Primary DOE	True		Energy Research and Development	Energy R&D
Irela	and on Co	llaboration in	n Energy Research	and Deve	elopment	ne United States and the Department of Energy of	the United Kingdom of Great Britain and Northern
			ion in energy R&D				
	21/1986	•	Secondary DOE		Primary DOE	Nuclear Energy	Dissolution of Fuel
		Clarifier Agre		n the Unit	ted States Departm	ent of Energy and the United Kingdom Atomic El	nergy Authority in the Area of Dissolution of Fuel
	2/5/1990	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Fiber-Optic Spectrophotometer
		•	•		•	0,	nergy Authority in the area of Measurement of Fissile
			Reprocessing Plan			ent of Energy and the officed Kingdom Atomic El	rergy Authority in the area of measurement of Fissile
Comment: inve	stigate the	performance	of fiber-optic couple	spectrop	hotometer for the me	easurement of fissile material concentrations	
7/5/1988 7/	/5/1993	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Solvent Extraction Centrifugal Contactors
Title: U.S.	. Departm	ent of Energy	y - United Kingdom	Atomic E	Energy Authority s	pecific memorandum of agreement in the area of	solvent extraction centrifugal contactors
						le material and exchange of information derived	
5/10/1979 12/	/31/1988	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Nuclear-Higher Actinides
		orandum of A Breeder Read		n the Dep	artment of Energy	and the United Kingdom Atomic Energy Authorit	y in Performance of higher Actinide in Liquid Metal
Comment: Join	nt experime	ental and analy	ytical program to inv	estigate th	ne neutronic and irra	diation performance of higher actinides in fast spectr	rum reactors
11/5/1979 11	/5/1987	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Fast Reactor Safety
			Agreement between Reactors (The Pl			ent of Energy and the United Kingdom Atomic E	nergy Authority in the area of reactor Safety in Liquid
Comment: Inve	estigate the	e behavior of f	uel pin under reacto	r core loss	of cooling		

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All Bilater	ral Agreeme	ents					
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
2/26/1980	12/31/1988	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Fast Reactor Fuels and Cladding
Title:	: United State	s Department	t of Energy and Uni	ited Kinga	lom Atomic Energy	Authority LMFBR Fuel Clad Swelling and	Creep Experiments Agreement
Comment:	: Investigate "ir	n-reactor" swe	lling and creep beha	vior of cur	rent and potential fu	ture fuel cladding in fast breeder reactors	
2/26/1980	12/31/1988	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Fast Reactor Cladding
		•			-	ergy Authority LMFBR Fuel Pin Clad Irradi	iation Agreement
			der irradiation of LM				D'
9/19/1986	9/30/1991	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Discrepancy Analysis of Enhanced Oil Recovery  Northern Ireland in the Field of Discrepancy Analysis of
i itie:		y Agreement il Recovery P		uie Depai	unent of Energy of	the United Kingdom of Great Britain and i	Northern Ireland in the Field of Discrepancy Analysis of
Comment	: Jointly undert	ake research i	in broad areas of dis	crepancy a	analysis		
10/8/1980	10/8/1985	Expired	Secondary DOE	True	Primary DOE	Nuclear Energy	Fast Reactor FuelHead End Shearing
Title	: Specific Mer LMFBR Fuel		Agreement betwee	n the Dep	artment of Energy	and the United Kingdom Atomic Energy A	uthority in the area of Mechanical Head End Searing of
Comment	: Joint experim	ental and ana	lytical program to inv				
11/3/1982	11/3/1986	Expired	Secondary DOE		Primary DOE	Nuclear Energy	Fast Reactor Safety
	LMFBR Safe	ty Design Pri	nciples	n the Unit	ted States Departm	ent of Energy and the United Kingdom Ato	omic Energy Authority in the area of a Common Approach to
	: Exchange of			Calaa	D. DOE	N. day 5	LUEDD Forthford Fort Works Only Or W
5/26/1983	5/26/1991	Expired	Secondary DOE		Primary DOE	Nuclear Energy	LMFBR Fuel Head End Wastes—Calif. Shuffler
i itie:			Agreement betwee Head End Wastes (				omic Energy Authority in the Area of Measurement of
Comment	: Investigate th	e performance	e of a 252 Cf Shuffle	r systems	for the measuremen	t of residual fuel in LMFBR Head End Wastes	3
10/18/1984	4/30/1990	Expired	Primary DOE	True		Energy Research and Development	Energy R&D
Title			anding between the in Energy Research			ne United States and the Department of En	ergy of the United Kingdom of Great Britain and Northern
Comment	: Establishing v	wider cooperat	tion in energy R&D.	Supersed	ed by		
6/11/1990	6/11/2000	In Force	Primary DOE	True		Energy Research and Development	Energy R&D
Title			anding between the esearch and develo		artment of Energy	and the Department of energy of the United	d Kingdom of Great Britain and Northern Ireland on
			cooperation in energ	•	and development.		
6/11/1990	6/11/2000	In Force	Primary DOE	True		Energy Research and Development	Energy R&D
Title	: Memorandui collaboration	m of understa n in energy re	anding between the esearch and develo	u.S. Dep pment	artment of Energy	and the Department of energy of the Unite	d Kingdom of Great Britain and Northern Ireland on
Comment	: To continue a	nd maximize	cooperation in energ	y research	and development.		
7/25/2002	7/25/2007	In Force	Primary DOE	True		Science and Technology	Implementing Agreement between DOE and Great Britain
Title						ited States of America and the Secretary of Themical and Biological Weapons Detection	of State for Defence of the United Kingdom of Great Britain n and Protection-Related Technologies
Comment	:	·					
7/3/2002	7/3/2007	In Force	Primary DOE	True		Science and Technology	Gov't to Gov't agreement between US and Great Britain
	Research an		Government of the ent of Weapons Det				f Great Britain and Northern Ireland for Cooperation in
Comment						<del></del>	MOU E B
11/6/2000	11/6/2010	In Force	Primary DOE	True		Energy Research and Development	MOU on Energy Research and Development

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Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Title:	Memoruand Great Britain	um of Unders n and Northe	standing Between Ti rn Ireland on Collab	he Depart oration in	ment of Energy of Energy Research	the United States of America and The Depar and Development	tment of Trade and Industry of the United Kingdom of
Comment:	Provides for	cooperation in	Fossil Energy, Energ	y Efficien	cy, Renewable Ene	rgy and the waste-related management and the	environment.
11/17/2000	11/17/2005	In Force	Secondary DOE	True	Primary DOE	Environmental Management	AEA Technology plc
Title:	Implementin R&D between	ng Arrangeme on the Depart	ent between the Dep ment of Energy of th	artment o e United	of Energy of the Ur States of America	nited States of America and AEA Technology and the Department of Trade and Industry o	pic Under the Memorandum of Understanding on Energy f the United Kingdom of Great Britain and Northern Irelan
Comment:							
3/10/2003	3/10/2008	In Force	Primary DOE	True		Fossil Energy	Cooperation in the Field of Fossil Energy Technology
Title:			ent between the Dep and to Cooperate in				of Trade and Industry of the United Kingdom of Great
Comment:		_					
3/10/2004	3/10/2009	In Force	Primary DOE	True		Environmental Management	
Title:	Reactor Tec	hnology Info	rmation Under the N	lemorano	lum of Understand	nited States of America and the United Kingd ling on Energy R&D between the Department e and Industry of the United Kingdom of Gre	lom Atomic Energy Authority for Exchange of Nuclear t of Energy of the United States of America and the at Britain and Northern Ireland
Comment:							
9/17/2001	9/17/2006	In Force	Primary DOE	True		Nuclear Verification Technologies	MOU between DOE and the Department of Trade and Industry of the United Kingdom
Title:	Memorandu Britain and i	m of Unders: Northern Irela	tanding between the and Concerning the	Departm Developn	ent of Energy of the nent and Implemen	ne United States of America and the Departm ntation of Nuclear Verification Technologies	ent of Trade and Industry of the United Kingdom of Grea
Comment:							
Country: I	Uzbekistan	1					
3/12/2002		In Force	Primary DOE	True		Arms Control and Nonproliferation	Proliferation of Nuclear Materials and Technologies
Tidle.				w of the	United States of A	manica and the Minister of Fausium Affaire of	the Developing of the objection of the contract of the contrac
Comment:	area of Prev	between the lention of Pro	Department of Energ Diferation of Nuclear	Material:	s and Technologie	nerica and the ministry of Foreign Anairs of s	the Republic of Uzbekistan Concerning Cooperation in the
Comment:	area of Prev	between the ention of Pro	Department of Energ Diferation of Nuclear	Material:	s and Technologie	nerica and the ministry of Foreign Affairs of s	the Republic of Uzbekistan Concerning Cooperation in ti
Comment:	area of Prev	between the sention of Pro	Department of Energoliferation of Nuclear	Materials  True	s and Technologie	Science and Technology	Science & Technology
Comment: Country: \ 12/8/1990	venezuela 12/8/1995	Expired	Intergovernmental	True	s and Technologie	Science and Technology	
Comment: Country: \ 12/8/1990 Title:	Venezuela 12/8/1995 Agreement	Expired	Intergovernmental	True	s and Technologie	Science and Technology	Science & Technology d the Government of the Republic of Venezuela
Comment: Country: \ 12/8/1990 Title:	Venezuela 12/8/1995 Agreement	Expired	Intergovernmental	True	s and Technologie	s  Science and Technology vernment of the United States of America and	Science & Technology d the Government of the Republic of Venezuela
Comment: 12/8/1990 Title: Comment: 10/13/1997	Venezuela 12/8/1995 Agreement to Promote and 10/13/2002	Expired for Science a strengthen S In Force	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE	True coperationses through	s and Technologie  n between the Gov	Science and Technology vernment of the United States of America and remation, research projects, exchange of scientis Energy Research and Development	Science & Technology  d the Government of the Republic of Venezuela  sts and technical experts.
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title:	Venezuela 12/8/1995 Agreement 1 Promote and 10/13/2002 Agreement 1	Expired for Science a strengthen S In Force for Energy Co	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE	True coperatio ses through	s and Technologie  n between the Gov	Science and Technology vernment of the United States of America and remation, research projects, exchange of scientis Energy Research and Development	Science & Technology  d the Government of the Republic of Venezuela sts and technical experts.  Energy Cooperation
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title:	Venezuela 12/8/1995 Agreement 1 Promote and 10/13/2002 Agreement 1	Expired for Science a strengthen S In Force for Energy Co	Intergovernmental Interdovernmental Ind Technological Co &T for peaceful purpo Primary DOE Ooperation between	True coperatio ses through	s and Technologie  n between the Gov	Science and Technology vernment of the United States of America and remation, research projects, exchange of scientis Energy Research and Development	Science & Technology  d the Government of the Republic of Venezuela sts and technical experts.  Energy Cooperation
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title: Comment: 3/6/1980	Venezuela 12/8/1995 Agreement i Promote and 10/13/2002 Agreement i Supersedes 9/8/1993	Expired for Science a strengthen S In Force for Energy Co the March 6, Expired between the	Intergovernmental Intergovernmental Interdict of Control of Contro	True poperation ses throughthe Department True	n between the Gov gh exchange of info	Science and Technology vernment of the United States of America and rmation, research projects, exchange of scientis Energy Research and Development of the United States of America and the Minis Energy Research and Development	Science & Technology of the Government of the Republic of Venezuela sts and technical experts. Energy Cooperation stry of Energy and Mines of the Republic of Venezuela
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title: Comment: 3/6/1980 Title:	Venezuela 12/8/1995 Agreement ( Promote and 10/13/2002 Agreement ( Supersedes 9/8/1993 Agreement ( Development ( On Sept 8, 1	Expired for Science a strengthen S In Force for Energy Co the March 6, Expired between the 1993 an agree	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE coperation between 1980 Energy R&D agr Primary DOE Department of Energy	True coperatio ses throughthe Department True gy of the continuing Imp	n between the Government of Energy of United States of Anderson	Science and Technology vernment of the United States of America and rmation, research projects, exchange of scientis Energy Research and Development of the United States of America and the Minis Energy Research and Development merica and the Ministry of Energy and Mines	Science & Technology of the Government of the Republic of Venezuela sts and technical experts.  Energy Cooperation stry of Energy and Mines of the Republic of Venezuela  Energy R&D of Venezuela in the Field of Energy Research and ferred to as annexes. The Sept 8, 1993 agreement was
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title: Comment: 3/6/1980 Title:	Venezuela 12/8/1995 Agreement ( Promote and 10/13/2002 Agreement ( Supersedes 9/8/1993 Agreement ( Development ( On Sept 8, 1	Expired for Science a strengthen S In Force for Energy Co the March 6, Expired between the 1993 an agree	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE coperation between 1980 Energy R&D agr Primary DOE Department of Energy	True coperatio ses throughthe Department True gy of the continuing Imp	n between the Government of Energy of United States of Anderson	Science and Technology vernment of the United States of America and rmation, research projects, exchange of scientis Energy Research and Development of the United States of America and the Minis Energy Research and Development merica and the Ministry of Energy and Mines ents, I, II, III, IV, VIII, X, XII, XIII, XIV and now re	Science & Technology of the Government of the Republic of Venezuela sts and technical experts.  Energy Cooperation stry of Energy and Mines of the Republic of Venezuela  Energy R&D of Venezuela in the Field of Energy Research and ferred to as annexes. The Sept 8, 1993 agreement was
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title: Comment: 3/6/1980 Title: Comment: 8/9/2001 Title:	Venezuela 12/8/1995 Agreement ( Promote and 10/13/2002 Agreement ( Supersedes 9/8/1993 Agreement ( Development ( Superceded ( 8/9/2006 Project Annuthe Bolivaria	Expired for Science a strengthen S In Force for Energy Co the March 6, Expired between the 1993 an agree by the Oct 13, In Force ex No. XVIII t	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE ooperation between 1980 Energy R&D agr Primary DOE Department of Energy ment was signed cont 1997 Energy Cooper Secondary DOE	True poperation ses through True the Depa eement True gy of the inuing Impation Agree True Energy (	and Technologie  In between the Government of Energy of the States of All plementing Agreement. Annexes I, Primary DOE Cooperation between	Science and Technology vernment of the United States of America and rmation, research projects, exchange of scientis Energy Research and Development of the United States of America and the Minis Energy Research and Development merica and the Ministry of Energy and Mines ents, I, II, III, IV, VIII, X, XII, XIII, XIV and now re IV, X, XIV, XV, XVI, and XVII were transferred to Fossil Energy en the Department of Energy of the United S	Science & Technology of the Government of the Republic of Venezuela sts and technical experts. Energy Cooperation stry of Energy and Mines of the Republic of Venezuela Energy R&D of Venezuela in the Field of Energy Research and ferred to as annexes. The Sept 8, 1993 agreement was to the Oct 13, 1997 agreement.
Comment: 12/8/1990 Title: Comment: 10/13/1997 Title: Comment: 3/6/1980 Title: Comment:	Venezuela 12/8/1995 Agreement ( Promote and 10/13/2002 Agreement ( Supersedes 9/8/1993 Agreement ( Development ( Superceded ( 8/9/2006 Project Annuthe Bolivaria	Expired for Science a strengthen S In Force for Energy Co the March 6, Expired between the 1993 an agree by the Oct 13, In Force ex No. XVIII t	Intergovernmental and Technological Co &T for peaceful purpo Primary DOE coperation between 1980 Energy R&D agr Primary DOE Department of Energ ment was signed cont 1997 Energy Cooper Secondary DOE	True poperation ses through True the Depa eement True gy of the inuing Impation Agree True Energy (	and Technologie  In between the Government of Energy of the States of All plementing Agreement. Annexes I, Primary DOE Cooperation between	Science and Technology vernment of the United States of America and rmation, research projects, exchange of scientis Energy Research and Development of the United States of America and the Minis Energy Research and Development merica and the Ministry of Energy and Mines ents, I, II, III, IV, VIII, X, XII, XIII, XIV and now re IV, X, XIV, XV, XVI, and XVII were transferred to Fossil Energy en the Department of Energy of the United S	Science & Technology of the Government of the Republic of Venezuela sts and technical experts. Energy Cooperation stry of Energy and Mines of the Republic of Venezuela Energy R&D of Venezuela in the Field of Energy Research and ferred to as annexes. The Sept 8, 1993 agreement was to the Oct 13, 1997 agreement. Project Annex No. XVIII - Natural Gas Technologies

Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Exchange pu	blished techni	cal information and j	ointly mod	ify or develop new t	echniques for the characterization of heavy crude	oil and heavy ends.
9/29/1980	10/13/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 4 - Enhanced Oil Recovery Thermal Processes
Title:			n the Department of Thermal Process	Energy o	of the United States	s of America and the Ministry of Energy and Mi	ines of the Republic of Venezuela in the Area of
Comment:		the application		m injectio	n for the recovery of	heavy oil thereby further efforts on the understand	ding of the thermal processes and the reservoir and its fluids
9/8/1993	9/8/1988	Expired	Primary DOE	True		Energy Research and Development	Energy R&D
Title:		etween the L d Developme		gy of the	United States of A	merica and the Ministry of Energy and Mines o	f the Republic of Venezuela in the Field of Energy
Comment:				_ <del></del>			
7/10/1980	9/8/1998	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Project Annex 2 - Heavy Crude Characterization
	Cooperation	in Supportin	ng Research at Univ	ersities, (	Government Energ	y Technology Centers, and National Laborator	
Comment:		blished techni	cal information and j	ointly mod		echniques for the characterization of heavy crude	
9/29/1980	12/31/1982	Expired	Secondary DOE	True		Fossil Energy	Project Annex 5 - Oil Drilling
Title:		g Agreement g, Coring, an		artment o	of Energy of the Ur	ited States of America and the Ministry of Ene	ergy and Mines of the Republic of Venezuela in the Areas
Comment:	SEMI-ANNU	AL CRITIQUE	MEETINGS OF RES	SEARCH F	PROJECTS		
9/29/1980	12/31/1982	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 6 - Residual Oil Saturation
Title:		g Agreement Oil Saturation		partment	of Energy of the U	nited States of America and the Ministry of En	ergy and Mines of the Republic of Venezuela in the Area
Comment:	SEMI-ANNU	AL CRITIQUE	MEETINGS OF RES	SEARCH F	PROJECTS		
2/5/1982	12/31/1983	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 7 - Petroleum Products
Title:	Implementing: Area of Petr	g Arrangeme oleum Produ	ent VII between the cts Utilization and E	Departme Evaluation	nt of Energy of the	United States of America and the Ministry of I	Energy and Mines of the Republic of Venezuela in the
Comment:							
2/5/1982	9/8/1998	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 8 - Coal Preparation and Combustion
Title:	Project Anne Preparation,	ex VIII betwee Combustion	en the Department of & Related Analytic	of Energy al Techno	of the United State clogy at Universitie	es of American and the Ministry of Energy and es, Government Energy Technology Centers, a	Mines of Republic of Venezuela to Cooperate in Coal nd National Laboratories
Comment:	: Cooperate in	coal technolo	gies at universities, e	energy tec	hnology centers and	national laboratories.	
7/12/1983	12/31/1988	Expired	Secondary DOE	False	Primary DOE	Fossil Energy	Project Annex 9 - Oil Field Subsidence
Title:			Agreement between Due to Fluid Withdra		rtment of Energy o	f the United States of America and the Ministr	y of Energy and Mines of the Republic of Venezuela in
Comment:	:	·· <del>-</del>	<del></del>				· · · · · · · · · · · · · · · · · · ·
2/29/1988	8/29/1991	Expired	Secondary DOE	True	Primary DOE	Energy Efficiency and Renewable Energy	Project Annex 11 - Conservation
Title:	: Implementin of Energy C	g Agreement onservation	t No. XI between the	e Departm	ent of Energy of th	ne United States of America and the Ministry of	f Energy and Mines of the Republic Venezuela in the Are
Comment:	: INFORMATION	ON EXCHANC	<u> </u>				
8/14/1987	9/8/1998	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 12 - Geochemistry
	Venezuela ii	the Area of	Geochemistry				Ministry of Energy and Mines of the Republic of
						Basin (geochemistry).	
2/29/1988	8/29/1991	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 13 - Microbial EOR

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All Bilater	al Agreeme	ents	·				
Start Date	End Date	Status	Agreement Type	Legally Binding	Parent Type	DOE Office	Brief Description
Comment:	Cooperate in	the area of ap	plication of microbia	l enhance	oil recovery in the	Venezuelan petroleum reservoirs.	
8/15/1995	10/13/2002	In Force	Secondary DOE	False	Primary DOE	Fossil Energy	Annex 16 - Oil and Petrochemical Ecology and Environmental Research
Title:	Implementing of the Republic	g Agreement blic of Venezu	XVI to the Memora rela in the Area of C	ndum of ( Dil and Pe	Inderstanding between trochemistry Ecolor	ween the Department of Energy of the United State ogy and Environmental Research	tes of America and the Ministry of Energy and Mines
Comment:	Information e	xchange, biote	echnology update an	d analysis	of industrial and en	vironmental trends.	
9/7/1995	10/13/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Annex 17 - Drilling Technology
	of the Repul	olic of Venezu	iela in the Area of D	rilling Te	chnology	•	tes of America and the Ministry of Energy and Mines
Comment:	Exchange inf	ormation and t	training of personnel	on drilling	technologies for mo	ore efficient and cost-effective methods drilling.	
3/14/1984	10/13/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 10 - Training of Petroleum Engineers
Title:	Project Anne Petroleum E		the Department of	Energy of	the United States	of America and the Ministry of Energy and Mines	of the Republic of Venezuela for On-Site Training of
Comment:	Training of V	enezuelan peti	roleum engineers at	Elks Hilis	Naval Petroleum Fa	cility.	
2/16/1989	10/13/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 14 - Exchange of Energy-Related Personnel
Title:		ex XIV betwee ted Personne		of Energy	of the United State	es of America and the Ministry of Energy and Min	es of the Republic of Venezuela for the Exchange of
Comment:	DOE and ME areas of foss	MV shall coop I energy.	erate in using their g	ood office	s and taking all reas	conable steps to facilitate the exchange of energy-rela	ated personnel between Venezuela and the U.S. in the
4/26/1994	10/13/2002	In Force	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 15 - Oil Recovery Information and Tech. Transfer
Title:	Implementing the Republic	g Agreement of Venezuela	XV to the Memoral a in the Area of "Oi	ndum of U Recover	Inderstanding betw y Information and T	veen the Department of Energy of the United State Technology Transfer"	es of America and the Ministry of Energy and Mines of
Comment:	Evaluate pas	t and ongoing	improved oil recover	y projects	in US and Venezue	la; Data base compilation and exchange	
7/10/1980	9/8/1998	Expired	Secondary DOE	True	Primary DOE	Fossil Energy	Project Annex 3 - Enhanced Oil Recovery Evaluation
Title:	Project Anno On-going Er	ex III between nhanced Oil R	the Department of lecovery Projects in	Energy on the Unite	f the United States ed States and Vene	of America and the Ministry of Energy and Mines ezuela	s of the Republic of Venezuela to Evaluate Past and
Comment:	Develop a co	nsistent and c	omprehensive datab	ase on the	performance of enl	hanced oil recovery projects.	
Country: '	Yugoslavia						
5/1/1988	5/31/1993	Expired	Intergovernmental	False		Science and Technology	Science & Technology
Title:			Sovernment of the lical Cooperation	United Sta	tes of America and	d the Federal Executive Council of the Assembly	of the Socialist Federal Republic of Yugoslavia on
Comment:			of mutual interest an transportation.	d benefit i	n such fields as agri	culture, energy, engineering, environment, health, mo	edical sciences, natural and social sciences, natural

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- 19) Revision No. 1 to Memorandum of Understanding Among the Department of Energy of the United States of America and the Commissariat À L' Énergie Atomique of the French Republic and the Japan Atomic Energy Agency Concerning Cooperation on Sodium Cooled Fast Reactor Prototypes **Tab 19**

- 20) Non-Disclosure Arrangement Concerning Cooperation on Sodium-Cooled Fast Reactor Prototypes **Tab 20**
- 21) Implementation Agreement 4 between the Department of Energy of the United States of America and the Ministry of National Infrastructure of the State of Israel for Cooperation in the Field of Renewable Energy and Energy Efficiency **Tab 21**
- 22) Statement of Intent between the Department of the United States of America and the Ministry of Economy, Trade and Industry of Japan for Cooperation in Methane Hydrates Signed by S. Bodman **Tab 22**
- 23) Memorandum of Understanding between the Department of Energy of the United States of America and the Ministry for Economy and Innovation of the Portuguese Republic on Cooperation in Wave Energy Technologies Signed by S. Bodman **Tab 23**
- 24) Statement of Intent between the Department of Energy of the United States of America and the Ministry of Knowledge Economy of the Republic of Korea for Exchange of Information on Gas Hydrate Research and Development Signed by S. Bodman **Tab 24**
- 25) Memorandum of Understanding between the Government of the United States of America and the Government of the Hashemite Kingdom of Jordan Concerning Cooperation in Nuclear Energy and other Energy Fields Signed by S. Bodman **Tab 25**
- 26) Memorandum of Understanding between the Department of Energy of the United States of America and the Ministry of National Infrastructures of the State of Israel Concerning Cooperation on Renewable and Sustainable Energy Signed by S. Bodman **Tab 26**
- 27) Memorandum of Understanding between the Department of Energy of the United States of America and the Ministry of Oil of the Republic of Iraq for Cooperation on Energy Analysis, Science and Technology, and Energy Technology Demonstration **Tab 27**
- 28) Agreement between the Department of Energy of the United States of America and the Centre National de la Recherche Scientifique of France for Cooperation in Basic Scientific Research and Development **Tab 28**

#### **ARRANGEMENT**

#### **BETWEEN**

#### THE UNITED STATES DEPARTMENT OF ENERGY

#### **AND**

#### THE CANADIAN NUCLEAR SAFETY COMMISSION

#### FOR CRITICAL ENERGY INFRASTRUCTURE PROTECTION TRAINING

The United States Department of Energy (DOE) and the Canadian Nuclear Safety Commission (CNSC), hereinafter collectively the "Participants,"

Noting that section 573 of the Foreign Assistance Act of 1961, as amended (FAA), authorizes, subject to appropriate terms and conditions, any agency of the United States Government to furnish certain services and commodities to an eligible foreign country on an advance-of-funds basis; and

Noting that the Director of United States Foreign Assistance, U.S. Department of State, has authorized DOE, under FAA section 573, to provide the training jointly determined by the Participants herein,

HAVE REACHED THE FOLLOWING UNDERSTANDING:

#### I. PURPOSE

- A. The purpose of this Arrangement is to establish a framework for the provision by DOE's National Training Center of certain agreed training to CNSC protective force personnel responsible for guarding Canadian civil nuclear facilities (hereafter the "Services").
- B. DOE is to be responsible for providing the services, materials, personnel and other resources necessary for performance and completion of the jointly decided Services. CNSC is to provide funds to DOE for provision of the Services on an advance-of-funds basis.

#### II. VALUE OF SERVICES

- A. The total gross value of the Services contemplated to be provided under this Arrangement is Sixty Thousand United States Dollars (\$US 60,000.00), to be allocated against compensation for the Services.
- B. DOE's reimbursement for Services is to be based on the rates specified in AnnexA. The Annex may be revised from time to time as necessary.

#### III. ADVANCE PAYMENT TERMS AND CONDITIONS

- A. CNSC is to make full advance payment for the full cost of the Services, including any necessary expenses and related costs, in United States dollars (the "Account"), in accordance with arrangements mutually decided by the Participants.
- B. DOE is to keep accounts and records of the costs of the Services provided, in accordance with its relevant regulations and generally accepted accounting principles, including those related to audits. DOE is to provide CNSC with a monthly accounting of disbursements from the Account for the Services. DOE is to return to the CNSC any CNSC funds remaining in the Account upon termination of or the completion of the Services by DOE.
- C. CNSC is to be responsible for all costs associated with delivery of the Services, including, but not limited to, travel between the United States and Canada and within the United States, lodging, meals, visas, supplies and equipment, and translation services. These costs are to be subject to DOE's normal budgetary guidelines and approvals. In the event that CNSC should for any reason decide to cancel or postpone a training event and/or be unable to meet required operational deadlines, CNSC is to be responsible for any expenses related to cancellation of scheduled activities.

#### IV. POINTS OF CONTACT

A. For purposes of facilitating communication under this Arrangement, CNSC hereby designates as its point of contact:

Director
Nuclear Security Division
Directorate of Security and Safeguards
Technical Support Branch
Canadian Nuclear Safety Commission

B. For the same purpose, DOE hereby designates as its point of contact:

Director National Training Center Office of Health, Safety and Security U.S. Department of Energy

C. Each point of contact is authorized to act on behalf of his/her respective Participant in all matters and issues related to provision of the Services covered under this Arrangement.

#### V. GENERAL PROVISIONS

- A. Cooperation under this Arrangement may commence upon signature by both Participants.
- B. This Arrangement may be revised at any time.
- C. The Participants may discontinue this Arrangement at any time in writing. Either Participant may discontinue its participation in this Arrangement by giving at least 90 days' advance notice in writing to the other Participant.

Upon termination of this Arrangement, CNSC is to be liable for, and DOE is to D. retain payment for, all financial commitments made by DOE related to this Arrangement prior to the effective date of cessation.

Signed in duplicate.

FOR THE UNITED STATES **DEPARTMENT OF ENERGY:** 

Date: 9/12/08
Place:
Albuquerque New Maxico

FOR THE CANADIAN NUCLEAR SAFETY COMMISSION:

Date:

9/12/08

Place:

ALBOUERQUE, NEW BEXICO.

#### ANNEX A

#### Schedule of Estimated Costs

The following estimate of costs is provided in support of the provision of training by the DOE National Training Center to protective force personnel sponsored by the Canadian Nuclear Safety Commission (CNSC).

The costing data presented consists of labor costs, other direct costs (supplies and support), contractor fees, and New Mexico Gross Receipts Tax.

Labor Costs		
NTC Full Time Employees	\$11,974.09	
Intermittent Part-Time Instructors	\$7,696.00	
Sub-Total		\$ 19,670.09
Other Direct Costs		
Supplies – Ammunition	\$ 6,538.50	
Supplies – General	\$ 187.00	
Supplies – Course Material, Hand-Outs	\$ 121.23	
Honeywell Support	\$ 14,453.00	
Sub-Total		\$ 21,299.73
Administrative Costs		
Labor Overhead	\$ 6,946.94	
Contractor Fees	\$ 8,246.03	
Sub-Total		\$ 15,192.97
New Mexico Gross Receipts Tax		
Sub-Total		<u>\$ 3,264.46</u>
TOTAL:		\$59,427.25

#### MEMORANDUM OF UNDERSTANDING

#### BETWEEN

THE GOVERNMENT OF THE UNITED STATES OF AMERICA

AND

THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA

CONCERNING COOPERATION IN THE AREA OF ADVANCED
PRESSURISED WATER REACTOR NUCLEAR POWER PROJECTS IN
CHINA AND RELATED TECHNOLOGY TRANSFER

THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA (TOGETHER HEREINAFTER REFERRED TO AS THE SIGNATORIES):

RECOGNIZING THAT THE UNITED STATES OF AMERICA AND THE PEOPLE'S REPUBLIC OF CHINA ARE NATIONS POSSESSING NUCLEAR WEAPONS AND ARE SIGNATORIES TO THE TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS AND MEMBERS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY;

NOTING THE AGREEMENT FOR COOPERATION BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY, SIGNED JULY 23, 1985 (HEREINAFTER REFERRED TO AS THE 1985 AGREEMENT);

NOTING THE AGREEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA (HEREINAFTER REFERRED TO AS THE DEPARTMENT OF ENERGY) AND THE STATE DEVELOPMENT AND PLANNING COMMISSION OF THE PEOPLE'S REPUBLIC OF CHINA ON COOPERATION CONCERNING PEACEFUL USES OF NUCLEAR TECHNOLOGIES, SIGNED JUNE 29, 1998;

NOTING THE STATEMENT OF INTENT ON EXCHANGE OF GOVERNMENT ASSURANCES REQUIRED FOR TRANSFER AND MUTUAL EXCHANGES OF NUCLEAR TECHNOLOGY BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND CHINA ATOMIC ENERGY AUTHORITY, SIGNED SEPTEMBER 16, 2003;

NOTING THAT THE PEACEFUL USE OF NUCLEAR ENERGY IS AN IMPORTANT FACTOR FOR BOTH COUNTRIES;

#### HAVE REACHED THE FOLLOWING UNDERSTANDING:

#### ARTICLE 1

RECOGNIZING THAT THE UNITED STATES GOVERNMENT HAS AUTHORIZED THE EXPORT TO THE PEOPLE'S REPUBLIC OF CHINA OF WESTINGHOUSE AP1000 TECHNOLOGY FOR USE IN THE SANMEN AND YANGJIANG AND OTHER AP1000 CIVILIAN NUCLEAR POWER PLANTS IN CHINA, HAS ISSUED LICENSES FOR THE EXPORT TO THE PEOPLE 'S REPUBLIC OF CHINA OF RELATED EQUIPMENT, FUEL AND SERVISES NECESSARY FOR THE USE OF AP1000 TECHNOLOGY IN THE CONSTRUCTION OF THE SANMEN AND YANGJIANG CIVILIAN NUCLEAR POWER PLANTS, AND HAS PROVIDED LETTERS EXPRESSING THE SUPPORT OF THE UNITED STATES GOVERNMENT FOR THE EXPORT OF AP1000 TECHNOLOGY AND EQUIPMENT TO CHINA BY WESTINGHOUSE FOR USE IN THOSE TWO PROPOSED PLANTS, THE GOVERNMENT OF THE UNITED STATES REAFFIRMS THAT IT SEES NO OBSTACLES TO THE APPROVAL OF NUCLEAR ENERGY PLANT EXPORTS FROM THE UNITED STATES TO THE PEOPLE'S REPUBLIC OF CHINA, CONSISTENT WITH THE 1985 AGREEMENT, FOR THE PROPOSED SANMEN AND YANGJIANG CIVILIAN NUCLEAR PLANT PROJECTS. THE GOVERNMENT OF THE UNITED STATES IS PREPARED TO TAKE ALL APPROPRIATE STEPS, SUBJECT TO UNITED STATES LAWS AND REGULATIONS, TO FACILITATE SUCH TRANSACTIONS IF THE CHINESE ENTERPRISES DECIDE TO PURCHASE THE WESTINGHOUSE AP1000 TECHNOLOGY AND RELATED EQUIPMENT. THE GOVERNMENT OF THE UNITED STATES HAS AUTHORITY TO LICENSE THE EXPORT OF WESTINGHOUSE NUCLEAR EQUIPMENT AND TECHNOLOGY FROM THE UNITED STATES. THE GOVERNMENT OF THE UNITED STATES OF AMERICA REITERATES ITS SUPPORT FOR THESE EXPORTS TO CHINA, AND AFFIRMS THAT FUTURE EXPORTS OF EQUIPMENT, FUEL, AND SERVICES RELATED TO CONSTRUCTION OF OTHER AP1000 TECHNOLOGY PROJECTS WILL BE TREATED IN ACCORDANCE WITH THIS MOU, AS

LONG AS SUCH EXPORTS ARE CONSISTENT WITH UNITED STATES LAWS AND REGULATIONS.

#### ARTICLE 2

IN ORDER TO FACILITATE THE SUCCESSFUL CONSTRUCTION AND COMPLETION OF THE SANMEN AND YANGJIANG NUCLEAR POWER PROJECTS WITH WESTINGHOUSE; AND THE TRANSFER OF TECHNOLOGY AND EXPORT OF EQUIPMENT BY WESTINGHOUSE TO CHINA; AND TO PROMOTE THE DEVELOPMENT OF ECONOMIC AND TRADE RELATIONS AND STRENGTHEN COOPERATION IN THE FIELD OF ENERGY BETWEEN THE SIGNATORIES, AND IN VIEW OF THE FACT THAT THE AP1000 REACTOR MODEL FALLS WITHIN THE SCOPE OF COOPERATION SET FORTH IN THE 1985 AGREEMENT, IT IS THE INTENTION OF THE SIGNATORIES THAT THIS MEMORANDUM OF UNDERSTANDING SUPPORT THE EXPORT TO CHINA AND UTILIZATION THERE OF WESTINGHOUSE AP1000 NUCLEAR ENERGY TECHNOLOGY IN CIVILIAN NUCLEAR POWER PROJECTS WITHIN THE SCOPE OF COOPERATION OF THE 1985 AGREEMENT.

#### ARTICLE 3

THE SIGNATORIES AFFIRM THAT INSTALLATION OF THE AP1000 NUCLEAR GENERATING UNITS AT THE SANMEN and YANGJIANG CIVILIAN NUCLEAR POWER PLANTS AND RELATED. TECHNOLOGY TRANSFER ARE KEY PROJECTS FOR ENERGY COOPERATION BETWEEN THE GOVERNMENTS OF CHINA AND THE UNITED STATES. THE SIGNATORIES INTEND TO INCLUDE THIS TOPIC IN THE ANNUAL DIALOGUE BETWEEN THE TWO GOVERNMENTS IN THE FIELD OF ENERGY AND TO ATTEMPT TO ADDRESS IN A TIMELY MANNER ANY PROBLEMS THAT MAY ARISE IN THE IMPLEMENTATION OF THESE PROJECTS.

#### ARTICLE 4

THE SIGNATORIES AFFIRM THAT THE CONSTRUCTION AND IMPLEMENTATION OF THE SANMEN AND YANGJIANG CIVILIAN NUCLEAR

POWER PROJECTS, USING WESTINGHOUSE AP1000 TECHNOLOGY CONSTITUTE COMMERCIAL TRANSACTIONS, UNDER THE LAWS AND REGULATIONS OF EACH SIGNATORY. THE SIGNATORIES CONFIRM THAT THE MUTUAL ASSURANCES CONTAINED IN THIS MEMORANDUM OF UNDERSTANDING ARE TO BE APPLIED TO ENSURE THE EXECUTION OF THE PROJECTS WITHOUT ANY HINDRANCE, TO THE EXTENT THAT IS POSSIBLE WITHIN LAWS AND REGULATIONS, AND IN ACCORDANCE WITH THE ABOVE MENTIONED AGREEMENTS.

#### ARTICLE 5

THIS MEMORANDUM OF UNDERSTANDING BECOMES EFFECTIVE UPON SIGNATURE BY BOTH SIGNATORIES.

SIGNED IN BEIJING, CHINA ON DECEMBER 16, 2006, IN DUPLICATE IN THE ENGLISH AND CHINESE LANGUAGES.

FOR THE GOVERNMENT
OF THE UNITED STATES OF
AMERICA

Semul Wodwan

FOR THE GOVERNMENT OF
THE PEOPLE'S REPUBLIC OF
CHINA

## MEMORANDUM OF UNDERSTANDING BETWEEN

## THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

# THE NATIONAL DEVELOPMENT AND REFORM COMMISSION OF THE PEOPLE'S REPUBLIC OF CHINA CONCERNING INDUSTRIAL ENERGY EFFICIENCY COOPERATION

The Department of Energy of the United States of America (DOE) and the National Development and Reform Commission of the People's Republic of China (NDRC), jointly referred to herein as the "Participants";

RECOGNIZING that the development and use of energy are key elements of the economic growth of the United States and the People's Republic of China (PRC);

SHARING common serious energy challenges from increasing energy imports and worsening environmental impacts as energy use rises;

SHARING the sense of commitment to enhancing energy security through cooperation;

NOTING the prominence of the industrial sector as an energy consumer in the PRC, accounting for 70 percent of the country's total energy demand;

NOTING the PRC's energy efficiency goals in its 11th Five-Year Plan (2006-10) and its call for a 20 percent reduction of energy consumption per GDP unit by 2010 compared to that of 2005; and

NOTING that the cooperation on industrial energy efficiency assessments was discussed at the second United States-China Energy Policy Dialogue, which met in Hangzhou, PRC, on September 13-14, 2006, and extended during the second Strategic Economic Dialogue which met in Washington, DC on May 22-23, 2007;

HEREBY declare their intention to jointly promote industrial energy efficiency improvements and emissions reductions through the establishment of programs and activities designed to strengthen the PRC's national, regional and local energy efficiency ability to make improvements at energy-intensive factories and facilities.

The first phase of this effort is to conduct industrial energy efficiency assessments, according to the following parameters:

1. DOE and the NDRC intend to cooperate to carry out the industrial energy efficiency assessment. The Participants' leading representatives in this cooperation are: Department of Resource Conservation and Environment Protection of NDRC and Energy Efficiency and Renewable Energy Office of DOE.

- 2. NDRC is responsible for selecting approximately 8-12 enterprises from the "Top 1000" energy-intensive enterprises in the PRC that have a sufficient level of short-term funding and can be reasonably expected to implement feasible energy efficiency improvements recommended by the DOE and NDRC assessment teams.
- 3. A team of DOE-assembled industrial energy efficiency experts, along with a similar team assembled by NDRC, plan to conduct on-site plant audits of the production process and plant energy systems at selected PRC plants utilizing all available data that the host enterprise provides.
- 4. The DOE and NDRC assessment teams should report verbally and in writing to the PRC enterprises, and to the relevant PRC local, provincial and central government bodies on short-term, medium-term and long-term recommendations to save energy and money, and reduce greenhouse gas emissions in the host factories.
- 5. DOE intends to pay for travel, accommodations, consumables, equipment and professional fees associated with DOE energy experts conducting each enterprise assessment.
- 6. DOE intends to provide software decision tools needed to conduct plant energy audits and to train factory personnel on the use of the software and plant audit techniques. DOE and NDRC plan to discuss ways to translate and re-engineer software tools and training materials. DOE plans to pay the costs of conducting the activities identified in this paragraph.
- 7. As part of plant energy audits, DOE energy experts plan to identify improvements that save energy, and to provide information on equipment suppliers from the United States who can assist in implementing improvements.
- 8. DOE also plans to identify potential technology and demonstrations for highly-efficient boilers, fired heaters, combined heat and power units and other substitute energy technologies.
- 9. DOE proposes to lead the development of a comparison study of selected PRC Top 1000 enterprises and selected large U.S. manufacturing plants in the steel, non-ferrous, petrochemical, chemical, and cement industries, and to identify differences in best practices between counterpart plants/industries.
- 10. DOE and NDRC intend to prepare a policy study to compare U.S. and PRC energy efficiency strategies, energy efficiency laws, policies, standards and energy efficiency management.

- 11. DOE and the NDRC intend to collaborate on developing plant efficiency standards which could be used as the basis of a PRC national energy efficiency label and ISO standard.
- 12. DOE intends to provide energy experts for training sessions in the United States and the PRC and for field visits to familiarize PRC energy-saving management personnel, including government personnel, energy-saving supervisory and monitoring personnel, energy policy research personnel and the management of big energy consumption enterprises, with U.S. energy saving laws, policies, advanced energy saving procedures and technologies and best practices.
- 13. The Participants expect PRC enterprises that participate in the assessment to designate a counterpart team, whose members are experienced in and knowledgeable of the production process and are available to work closely with the DOE and NDRC assessment teams.
- 14. The Participants understand that U.S. in-kind contributions to the cooperative activities undertaken under this Memorandum of Understanding (Memorandum) are not to be subject to any form of import tax, duty or other charge assessed by the PRC.
- 15. DOE and NDRC understand that U.S. personnel who conduct the assessments under this Memorandum may be required to conclude written agreements with PRC enterprises, as appropriate, for the non-disclosure of the enterprises' business-confidential information.
- 16. This Memorandum does not create any legally binding obligations between the Participants.

Signed at San Francisco, this 12th day of September, 2007, in duplicate in the English and

Chinese languages.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE NATIONAL DEVELOPMENT AND REFORM COMMISSION OF THE PEOPLE'S REPUBLIC OF CHINA:

及校人

#### **PROTOCOL**

## BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

# THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA FOR COOPERATION IN THE FIELDS OF ENERGY EFFICIENCY AND RENEWABLE ENERGY TECHNOLOGY DEVELOPMENT AND UTILIZATION

The Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China ("the Parties"):

Considering the cooperation between the countries in science and technological development pursuant to the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed on January 31, 1979, as amended and extended ("Umbrella Agreement");

Noting expiration of the Protocol between the Department of Energy of the United States of America and the State Science and Technology Commission of the People's Republic of China for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization signed February 23, 1995, as extended and amended ("1995 Protocol");

Desiring to continue the cooperation undertaken under the now-expired 1995 Protocol in the fields of energy efficiency and renewable energy technology development and utilization for the mutual benefit of each Party;

Recognizing that there is a mutual interest in promoting the acceleration of scientific and technological research and development in the fields of energy efficiency and renewable energy technology, and the commercialization of technologies developed through such activities; and

Believing that such research and development will accelerate the supplementation of fossil fuels with clean energy sources and promote economic and trade cooperation;

#### HAVE AGREED AS FOLLOWS:

#### ARTICLE 1 SCOPE AND OBJECTIVE

- A. This Protocol is subject to the Umbrella Agreement. In the event of any conflict between the terms and conditions of the Umbrella Agreement and this Protocol, the terms and conditions of the Umbrella Agreement will govern.
- B. The objective of this Protocol is to promote technological cooperation between the Parties in the fields of energy efficiency and renewable energy technology development and utilization.

## ARTICLE 2 AREAS OF COOPERATION

- A. Cooperation under this Protocol in the field of energy efficiency technology may take place in the following areas:
  - 1. Energy conservation technology in construction;
  - 2. Energy conservation technology in transportation and technology for alternative automobile fuel;
  - 3. Energy conservation technology in industries; and
  - 4. Such other areas in the field of energy efficiency technology as may be mutually agreed to, in advance, in writing, by the Parties.
- B. Cooperation under this Protocol in the field of renewable energy may include the following areas:
  - 1. Solar energy;
  - 2. Wind energy;
  - 3. Biomass energy;
  - 4. Geothermal energy:
  - 5. Ocean energy;
  - 6. Hydrogen energy; and
  - 7. Such other areas in the field of renewable energy as may be mutually agreed, in advance, in writing, by the Parties.

### ARTICLE 3 FORMS OF COOPERATION

Cooperative activities undertaken pursuant to this Protocol may include the following:

- A. Exchange of technical information and data on science and technical activities and methods and results of research and development;
- B. Exchange visits concerning the design and implementation of national renewable energy technologies and energy efficiency technology, including operational procedures, management and oversight, policy analysis, technology transfer and commercialization:
- C. Organization of, and participation in, technological demonstrations and seminars and other meetings on specific mutually agreed topics;
- D. Exchanges of information concerning commercialization and market potentials;
- E. Joint projects in which the Parties agree to share the work and costs; and
- F. Such other cooperation as may be agreed by the Parties, in advance, in writing.

## ARTICLE 4 PROJECT ANNEX

The Parties shall execute a Project Annex for each joint project undertaken under Article 3.E. of this Protocol. Each Project Annex, which shall be subject to this Protocol, shall contain provisions covering technical scope, exchange of proprietary information, management, total costs, cost sharing and schedule, as appropriate.

## ARTICLE 5 MANAGEMENT

- A. Each Party shall name one Principal Coordinator to supervise activities under this Protocol. The Principal Coordinators shall, by correspondence, consult with each other at least annually to evaluate the status of cooperation under this Protocol. This evaluation will include review of the achievements, problems, and effectiveness of activities under this Protocol. The Principal Coordinators also will consider future program opportunities with a view to maximizing the mutual benefits of cooperation. When necessary, the Principal Coordinators shall meet to consider matters related to the implementation of this Protocol. Such meetings shall be held alternately in the United States of America and the People's Republic of China.
- B. Subject to the prior approval of the Parties, the Principal Coordinators shall appoint Project Coordinators to manage specific cooperative activities initiated under this Protocol and to establish and maintain working contacts at the staff level.

## ARTICLE 6 ADDITIONAL ORGANIZATIONS

The Parties may invite additional organizations within their own countries to participate, at those organizations' own expense, and subject to such terms and conditions as the Parties may specify, in cooperative activities under this Protocol. Such organizations may become signatories to annexes to this Protocol upon agreement of both Parties in writing.

#### ARTICLE 7 ASSIGNMENT OF STAFF

The following provisions shall apply to assignment of staff:

- A. Each Party shall ensure that qualified staff is selected for assignment to the other Party. Each assignment of staff shall be the subject of an exchange of letters between the participating institutions.
- B. Each Party shall be responsible for its staff's salaries, insurance, and allowances, and for the travel and living expenses of its staff while on assignment to the receiving Party unless otherwise agreed, in advance, in writing, by the Parties.
- C. The receiving Party shall provide all necessary assistance to the visiting staff and their families as regards administrative formalities, such as making travel arrangements.
- D. The sending Party shall ensure that its staff conforms to the general and special rules of work and safety regulations in force at the establishment of the receiving Party, unless otherwise agreed in a separate assignment agreement.

## ARTICLE 8 INTELLECTUAL PROPERTY AND INFORMATION

A. Dissemination, use and protection of information used or generated in the activities conducted pursuant to this Protocol and its annexes, and the allocation of rights in intellectual property arising in the course of such activities shall be governed by the provisions set forth in Annex I to the Umbrella Agreement.

B. Any scientific and technical information provided by one Party to the other Party pursuant to this Protocol shall be accurate to the best knowledge and belief of the providing Party; however, neither Party warrants the suitability of the information for any particular use or application by the receiving Party or any third party.

#### ARTICLE 9 AVAILABLE INFORMATION

Each Party shall make available to the other technical information that is: (1) relevant to or necessary for activities conducted under this Protocol; and (2) either in the Party's possession or available to it and which it has the right to disclose.

#### ARTICLE 10 SECURITY OBLIGATION

Both Parties agree that no information or equipment requiring protection in the interest of national security, defense or foreign relations and classified in accordance with its applicable national laws, regulations or directives shall be provided under this Protocol. In the event that information or equipment which is known or believed to require such protection is identified by a Party in the course of cooperative activities pursuant to this Protocol, it shall be brought immediately to the attention of the appropriate officials of the other Party. The Parties shall consult to identify and implement appropriate security measures for such information and equipment, to be agreed upon by the Parties in writing. The Parties shall, if appropriate, amend this Protocol to incorporate such security measures.

#### ARTICLE 11 COSTS

Unless otherwise agreed in writing, costs resulting from activities under this Protocol shall be the responsibility of the Party that incurs them.

## ARTICLE 12 APPLICABLE LAW AND AVAILABILITY OF RESOURCES

Each Party shall conduct the activities provided for in this Protocol subject to the applicable laws and regulations of its respective country, and shall provide resources subject to the availability of its personnel and appropriated funds.

#### ARTICLE 13 DISPUTES

Any dispute concerning the interpretation or application of this Protocol shall be settled by consultation of the Parties.

#### ARTICLE 14 GENERAL PROVISIONS

- A. This Protocol shall enter into force upon signature and, subject to paragraph D of this Article, shall remain in force for five (5) years.
- B. This Protocol may be amended or extended by written agreement of the Parties.
- C. The Parties may agree to continue until completion all activities initiated but not completed at the expiration of this Protocol.

D. Either Party may terminate this Protocol at any time upon six (6) months advance written notice to the other Party.

DONE at Beijing, this 15th day of December, 2006, in duplicate, in the English and Chinese languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA:

5

#### ANNEX II

## TO THE PROTOCOL BETWEEN

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA FOR

COOPERATION IN THE FIELDS OF ENERGY EFFICIENCY AND RENEWABLE ENERGY TECHNOLOGY DEVELOPMENT AND UTILIZATION

## FOR ELECTRIC, HYBRID-ELECTRIC, FUEL CELL, AND ALTERNATIVE FUEL VEHICLE DEVELOPMENT

The Department of Energy of the United States of America (USDOE) and the Ministry of Science and Technology (MOST) of the People's Republic of China (PRC), hereinafter referred to as the "Parties":

Noting the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed at Washington on January 31, 1979, as amended and extended, hereinafter referred to as the "Umbrella Agreement;"

Noting that under the Umbrella Agreement the Parties signed a Protocol for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization on December 15, 2006, hereinafter referred to as the "Protocol;"

Noting that Article 2 of the Protocol identifies a number of areas for potential cooperation in the field of energy conservation technology in transportation and technology for alternative automobile fuel; and that Article 6 of the Protocol provides that the USDOE and the MOST may invite other organizations to participate in cooperative activities under the Protocol; and

Desiring to establish cooperation between agencies in the United States and in the PRC for electric and hybrid-electric vehicle development, as well as other modes of electric transportation including hybrid, fuel cell and alternative fuel vehicles, and electric bicycles, in order to enhance the commercialization potential of such technology for the benefit of the Parties' countries;

Have agreed as follows:

#### ARTICLE I – OBJECTIVE

- A. This Annex is subject to the terms and conditions of the Umbrella Agreement and the Protocol. In the event of any conflict between the terms and conditions of the Umbrella Agreement or the Protocol and this Annex, the Umbrella Agreement and the Protocol shall govern.
- B. The objective of this Annex is to establish the framework for specific collaboration, including demonstrations as provided in Article IV, in order to promote large-scale deployment in the PRC and the United States of advanced automotive technologies for electric vehicles, including light duty passenger and business vehicles and electric buses, and other forms of electric, alternative fuel, and hybrid fuel cell transportation, into appropriate fleets and other applications. The collaboration will be undertaken with support from DOE and MOST, national laboratories, the automobile industries in the United States and the PRC, and U.S. and Chinese private industry organizations involved in energy efficient transportation.

#### ARTICLE II – AREAS FOR COOPERATION

Cooperation under this Annex may include, but is not limited to, the following areas:

- A. Technical Cooperation
  - 1. Advanced Batteries;
  - 2. Alternating Current Motor Control Systems;
  - 3. Fast Charging Batteries;
  - 4. Advanced Materials for Vehicle Systems; and
  - 5. Vehicle Charging and Fueling Infrastructure.
- B. Provision of Information

Electric, Hybrid Electric, Alternative Fuel and Fuel Cell Vehicles Infrastructure Requirements: Building Codes and Safety Standards, Non-Financial and Regulatory Incentives, and Electricity Rates.

#### ARTICLE III – PARTICIPATING ORGANIZATIONS

A. The principal organization responsible for conducting the cooperative activities under this Annex in the United States shall be the USDOE. The principal organization responsible for conducting the cooperative activities under this Annex in the PRC shall be the MOST.

B. Each Party may invite other government agencies and organizations and private organizations in its country to participate in cooperative activities under this Annex at the participating organization's own expense and subject to such terms and conditions as the Parties may specify. For the USDOE, such participating organizations may include USDOE national laboratories.

#### ARTICLE IV - FORMS OF COOPERATION

Cooperative activities undertaken pursuant to this Annex may include, but are not limited to, the following:

A. Exchange of Technical Information and Experiences and Collaborative Visits

The Parties will exchange technical information and experiences and arrange collaborative visits. These exchanges and visits may address research and development programs, technical and economic evaluation, maintenance and operational procedure, and facilities relating to electric, hybrid-electric, fuel cell and alternative fuel vehicle technology.

B. Economic, Environment, and Policy Studies

The Parties will conduct specific economic and policy studies in order to enhance joint understanding of appropriate mechanisms and policies to promote rapid implementation of electric vehicles in an environmentally and economically acceptable manner. The Parties will explore the need for a joint environmental evaluation of such implementation and will develop and implement such an evaluation, as appropriate.

#### C. Demonstrations

The Parties will explore the need for demonstrations in order to show the technical and economic feasibility of electric vehicle technologies in areas of cooperation set out in Article II of this Annex. USDOE may send to the PRC vehicles, instrumentation, equipment or spare parts for use in demonstrations carried out under this Annex, which vehicles and other items shall remain U.S. Government property unless otherwise agreed in writing. Such property may be donated to the Government of the PRC or exchanged for data or information owned by the Government of the PRC consistent with the laws and regulations of the Parties' countries. The MOST shall pay the cost of demonstration activities, transportation, and installation related to demonstrations.

Each Party shall exercise due care in carrying out demonstration projects under this Annex.

#### D. Professional Training

The Parties will explore the need to train PRC professionals in electric vehicle and supporting technologies.

#### ARTICLE V - MANAGEMENT

The Parties shall each designate one Project Coordinator. The Project Coordinators shall jointly plan the technical approach for accomplishing the objective of this Annex, and shall be responsible for the collaborative program, schedule, and coordination. The Project Coordinators will also make progress reports at Project Coordination Meetings to be held at mutually agreed sites, preferably annually.

#### ARTICLE VI – COSTS AND LEGAL PROVISIONS

Except when otherwise specifically agreed by the Parties in writing, all costs (including travel and lodging expenses) resulting from cooperation under this Annex shall be borne by the Party that incurs them. The implementation of this Annex is subject to the availability of appropriated funds and personnel, and to applicable laws and regulations of the countries of the Parties.

#### ARTICLE VII – INTELLECTUAL PROPERTY RIGHTS

Article 8 of the Protocol and Annex I of the Umbrella Agreement govern the dissemination, use and protection of information used or generated in the course of activities conducted under this Annex, and the allocation of intellectual property rights arising from this activity.

#### ARTICLE VIII - ENTRY INTO FORCE AND TERMINATION

- This Annex shall enter into force upon signature by the Parties and remain in A. force for five (5) years or until termination of the Protocol, whichever occurs first. This Annex may be amended or extended by written agreement of the Parties, so long as the Protocol remains in force.
- At the discretion of either Party, this Annex may be terminated upon six (6) B. months advance notice in writing to the other Party.

SIGNED at Washington, DC, this 17th day of September, 2007, in duplicate, in the English and Chinese languages, each text being equally authentic.

FOR THE DEPARTMENT OF **ENERGY OF THE UNITED STATES** OF AMERICA:

Offerson

FOR THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA:

## PROJECT ANNEX III UNDER IMPLEMENTING ARRANGEMENT BETWEEN

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

## THE MINISTRY OF INDUSTRY AND ENERGY OF THE KINGDOM OF SPAIN ON COOPERATION IN RESEARCH ON RADIOLOGICAL EVALUATIONS

The Department of Energy of the United States of America (DOE) and the Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), hereinafter the "Parties",

Acting in furtherance of Article 2.F. of the Implementing Arrangement between the Department of Energy of the United States of America and the Ministry of Industry and Energy of the Kingdom of Spain on Cooperation in Research of Radiological Evaluations of September 15, 1997 (the "Implementing Arrangement"),

Hereby agree as follows:

#### Section 1

- A. The Parties agree to cooperate in the conduct of activities set forth in Section 2 of this Project Annex.
- B. This Project Annex is subject to and governed by the Implementing Arrangement.

#### Section 2

#### Responsibilities of the Parties

CIEMAT will have primary responsibility for the conduct of activities under this Project Annex. DOE will provide scientific and technical collaboration and support to CIEMAT, as appropriate, in the following:

A. Scientific collaboration and exchanges of technical expertise and data with particular focus on the validation of the radiological health environment and health assessments;

B. Continuation of environmental surveillance involving continuous monitoring and cross validation checks of plutonium and americium levels in soil, air, water, vegetation and local animals, with special emphasis to be placed on determining the risks associated with resuspension and the reassessment of the presence of plutonium and americium;



- C. Continuation of assessment of internal exposure involving bioassay of plutonium and americium;
- D. Continuation of the periodic medical surveillance of the population of Palomares;
- E. Continuation of cooperation to complete a 3-dimensional radiological survey and final monitoring of affected areas at, and near, the Palomares impact zones identified as Impact Zones 2 and 3, as well as new Zone 6. The estimated time to execute the 3-D radiological survey is approximately 2 years.

#### Section 3

#### A. Funding and Budget

The Parties intend to share the costs of cooperative activities under this Project Annex, which costs are expected to be mainly of personnel and equipment. In 2007, DOE has already paid to CIEMAT USD 383,000 for the work performed during 2006, and according to Project Annex II under the Implementing Arrangement. For this Project Annex, DOE intends to transfer to CIEMAT USD 750,000 for 2007 and USD 850,000 for 2008, to be paid in DOE Fiscal Years 2008 and 2009, following the execution of the planned work.

#### B. Progress Reports and Follow-up

- 1. Preparation of a progress report, to be submitted by CIEMAT to the Parties' designated representatives, every 6 months starting from the entry into force of this Project Annex. CIEMAT will also prepare a final summary report of the 3-dimensional radiological survey.
- 2. If follow-up cleanup activity is determined to be necessary, CIEMAT will prepare the recommendations with the goal of a complete and final cleanup of the area, both surface and underground.
- 3. Six months before completion of the work cited in Section 2E of this Project Annex, DOE will assist CIEMAT to contact appropriate representatives of the United States Department of Defense concerning those recommendations.

#### Section 4

The Parties' principal representatives for the collaborative activities conducted under this Project Annex are: for DOE, the Director of Health and Safety; for CIEMAT, the Director(a), Departamento de Medio Ambiente.

#### Section 5

This Project Annex supersedes and replaces Project Annex I of September 15, 1997, and Project Annex II under Implementing Arrangement between the Department of Energy of the United States of America and the Ministry of Industry and Energy of the Kingdom of Spain on Cooperation in Research on Radiological Evaluations of March 9, 2006.

#### Section 6

- A. This Project Annex shall enter into force upon signature and, provided the Implementing Arrangement remains in force, shall remain in force until September 30, 2009, unless terminated earlier in accordance with paragraph B of this section 6.
- B. Either Party may terminate this Project Annex by providing 90 days written notice to the other Party.

DONE at Madrid, this 10<sup>th</sup> day of September 2007, in duplicate, in the English and Spanish languages, both texts being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

Glenn Schodonsky

Chief Health, Safety and Security Officer Office of Health, Safety and Security

FOR THE CENTRO DE INVESTIGACIONES ENERGÉTICAS MEDIOAMBIENTALES Y TECNOLÓGICAS:

Miguel Ángel Quintanilla

President

# AGREEMENT BETWEEN THE JAPAN ATOMIC ENERGY AGENCY AND THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

#### FOR

## COOPERATION IN RESEARCH AND DEVELOPMENT IN NUCLEAR SCIENCE AND ENERGY

The Japan Atomic Energy Agency (JAEA) and the Department of Energy of the United States of America (DOE), hereinafter collectively called the "Parties",

Noting that the JAEA is the successor to both the Japan Nuclear Cycle Development Institute and the Japan Atomic Energy Research Institute;

#### Noting further

the Agreement between the Department of Energy of the United States of America and the Japan Nuclear Cycle Development Institute in the Field of Radioactive Waste Management signed March 19, 2003 (hereinafter the "2003 Agreement"),

the Agreement between the Department of Energy of the United States of America and the Japan Nuclear Cycle Development Institute in the Field of Nuclear Technologies signed August 22, 2000, and

the Agreement between the Department of Energy of the United States of America and the Japan Atomic Energy Research Institute in the Field of Nuclear Research and Development signed July 17, 1995, and

Wishing to continue the long-term and productive cooperation among DOE and JAEA's predecessors in energy-related areas,

Hereby agree as follows:

#### Article 1 Objective

1.1 Cooperation between the Parties shall be aimed at advancing progress towards a more secure and efficient energy future, a cleaner global environment and improved scientific knowledge and tools to achieve advances in nuclear science and energy research and development for peaceful purposes. Cooperation under this Agreement may include research; development; testing and evaluation of technology, equipment, and procedures; and exchange of information in order to advance these nuclear science and energy objectives.

1.2 Cooperation between the Parties shall be on the basis of mutual benefit, equality, and reciprocity.

## Article 2 Areas of Cooperation

The areas of cooperation under this Agreement may encompass, but are not limited to:

- (i) Advanced nuclear technology;
- (ii) Quantum beam technology;
- (iii) Radioactive waste management;
- (iv) Fusion energy research;
- (v) Other areas of nuclear science and energy-related research and development as may be mutually agreed in writing by the Parties.

## Article 3 Methods of Cooperation

- 3.1 Cooperation in accordance with this Agreement may include, but is not limited to, the following:
  - 3.1.1 Exchange of scientists, engineers and other specialists, including those from industry and other non-government sectors for participation in energy-related research, development, analysis, design and experimental activities conducted in research centers, laboratories, engineering offices, and other facilities and enterprises of the Parties or their designated representatives;
  - 3.1.2 Exchange or loan of samples, materials, instruments and components for testing;
  - 3.1.3. Exchange of unclassified scientific and technical information, including results and methods of research and development;
  - 3.1.4 Joint research activities in which the Parties agree to share the work and/or costs. Each such joint research activity shall be the subject of a written Project Annex as described in Article 4;
  - 3.1.5 Organization of seminars, workshops, and other meetings on agreed topics;
  - 3.1.6 Visits by a Party's specialist teams or individuals to the facilities of the other Party;

- 3.1.7 The use by one Party of the facilities owned or operated by the other Party. Such use of facilities shall be the subject of a separate written agreement between the Parties.
- 3.2 Other specific forms of cooperation may be added by agreement of the Parties.

### Article 4 Project Annexes

Cooperative activities under this Agreement may be undertaken by the Parties or, as appropriate, laboratories or contractors of the Parties. The Parties may designate non-governmental scientific and technological research institutions within their respective countries to carry out the joint projects. Each cooperative activity that may involve the sharing of costs or that may give rise to intellectual property shall be described in writing in a Project Annex, which shall be subject to approval by the Permanent Coordinating Group (as provided for in Article 5). Such Project Annexes shall include detailed provisions for carrying out the specified forms of cooperation, including such matters as technical scope, exchange of business-confidential information, management, total costs, cost sharing and schedule. Each Project Annex shall be subject to and shall refer to this Agreement.

## Article 5 Management

- 5.1 The Parties hereby establish a Permanent Coordinating Group (PCG) to supervise the implementation of this Agreement. Decisions of the PCG shall be made by consensus of the Parties.
- 5.2 Each Party shall designate a Principal Coordinator to supervise the implementation of this Agreement. Technical management of the cooperation shall be carried out by project leaders designated by the Principal Coordinators. Project leaders shall be responsible for the working contacts between the Parties in their respective areas of cooperation. The Principal Coordinators shall agree on specific details of cooperation in the technical areas listed in Article 2 of this Agreement, within policy guidelines established by the PCG.
- 5.3 The PCG shall meet once each year, alternately in the United States and in Japan, or at such other times and places as agreed. At its meetings, the PCG shall evaluate the status of cooperation under this Agreement. This evaluation shall include a review of the past year's activities and accomplishments and of the activities planned for the coming year, an assessment of the balances of exchanges within each technical field or group of related technical fields listed in Article 2, and consideration of measures designed to ensure that such exchanges are mutually beneficial to the Parties. In addition, the PCG shall consider and act on any major new proposals for collaboration. Principal Coordinators and other

advisers to the Parties may, at the discretion of the PCG, participate in these annual meetings.

## Article 6 Exchange of Personnel

The following provisions shall apply concerning exchanges of personnel under this Agreement:

- Whenever an exchange of personnel is contemplated, each Party shall endeavor to ensure the selection of qualified personnel with skills and competence necessary to conduct the activities planned under this Agreement. Each such exchange of personnel shall be agreed in advance by an exchange of letters between the Parties, referencing this Agreement and its pertinent intellectual property provisions.
- Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or its contractors.
- 6.3 Each Party shall pay for the travel and living expenses of its staff or its contractors while on assignment to the host Party, unless otherwise agreed in writing.
- The host Party shall help locate adequate accommodations for the other Party's staff or contractors and their families on a mutually agreeable reciprocal basis.
- 6.5 Each Party shall provide all necessary assistance to the assigned staff of the other Party or its contractors and their families as regards administrative formalities, such as assistance in making travel arrangements.
- 6.6 The staff and contractors of each Party shall conform to the general and specific rules of work and safety regulations in force at the host establishment.

### Article 7 Exchange of Equipment

By mutual agreement, a Party may provide equipment to be utilized in a joint activity. In that event, the following provisions shall apply:

7.1 The sending Party shall supply, as early as possible, a detailed list of the equipment to be provided, together with the relevant specifications and appropriate technical and informational documentation related to use, maintenance, and repair of the equipment.

- 7.2 Title to the equipment and necessary spare parts supplied by the sending Party for use in joint activities shall remain with the sending Party, and the equipment shall be returned to the sending Party upon completion of the joint activity, unless otherwise agreed.
- 7.3 Equipment provided pursuant to this Agreement shall be brought into operation at the host establishment only by agreement of the Parties.
- 7.4 The host establishment shall provide the necessary premises and shelter for the equipment; utilities such as electric power, water and gas; and normally, shall provide materials to be tested, in accordance with all technical requirements, which shall be as mutually agreed upon.
- 7.5 Responsibility for expenses, safekeeping, and insurance during the transport of equipment from the original location in the country of the sending Party to the place of entry in the country of the receiving Party shall rest with the sending Party. If the sending Party elects to have the equipment returned, it shall be responsible for expenses, safekeeping, and insurance during the transport of the equipment from the original point of entry in the country of the receiving Party to the final destination in the country of the sending Party.
- Responsibility for expenses, safekeeping, and insurance during the transport of equipment from the place of entry in the country of the receiving Party to the final destination in the country of the receiving Party shall rest with the receiving Party. If the sending Party elects to have the equipment returned, the receiving Party shall be responsible for expenses, safekeeping, and insurance during the transport of the equipment from the final destination in the country of the receiving Party to the original point of entry in the country of the receiving Party.
- 7.7 Responsibility for expenses, safekeeping, and insurance during the time period that the equipment is in use in the country of the receiving Party shall rest with the receiving Party unless otherwise agreed in writing.
- 7.8 Equipment provided pursuant to this Agreement for use in joint activities shall be considered to be scientific, not having a commercial character, and each Party shall make its best effort to obtain duty free entry.

## Article 8 Samples and Materials

Unless otherwise agreed in writing, the following provisions shall apply to the transportation and use of samples and materials provided by one Party to the other Party under this Agreement:

8.1 All samples and materials provided by the sending Party to the receiving Party shall remain the property of the sending Party, and shall be returned to the sending Party on request.

- Where one Party requests that the other Party provide a sample or material, the Party making the request shall bear all costs and expenses associated with the transportation of the sample or material from the location of the sending Party to its final destination.
- 8.3 Each Party shall promptly disclose to the other Party all information arising from the examination or testing of samples or materials exchanged under this Agreement. The Parties agree that business-confidential information (as defined in Section III of the Intellectual Property Rights Annex attached to this Agreement), which was developed prior to or outside the scope of this Agreement, shall remain business-confidential even though it is contained in the results of an examination or testing of samples or materials. Such information shall be identified as business-confidential by the Party asserting its business-confidential nature as soon as possible after disclosure of all information arising from the examination or testing is made to such Party and the other Party shall be immediately advised of that identification. All information identified as business-confidential shall be controlled as provided in Section III of the Intellectual Property Rights Annex.
- A Party providing samples or materials to the other Party may also provide a partial or complete list of the types of information that may result from the examination or testing of such samples or materials and which are to be treated as business-confidential as defined in Section III of the Intellectual Property Rights Annex. All such business-confidential information is to be controlled as set out in Section III of that Annex.

## Article 9 Transfer of Information and Equipment

- 9.1 The Parties may exchange, as agreed on a mutually beneficial basis, scientific and technical information, documents, and results of research and development of work carried out under this Agreement. Such information shall be limited to that which the Parties have the right to disclose, either in their possession or available to them, relating to the areas of cooperation described in Article 2.
- 9.2 Seminar proceedings and reports of joint activities carried out under this Agreement shall be published as joint publications, as agreed by the Parties.
- 9.3 The Parties agree that information developed and exchanged under this Agreement should be given wide distribution. Except as provided in Section III of the Intellectual Property Rights Annex to this Agreement, such information may be made available to the public by either Party through customary channels and in accordance with normal procedures of the Parties.

## Article 10 Intellectual Property; Business-Confidential Information

The protection and allocation of intellectual property and the treatment of business-confidential information created or furnished in the course of cooperative activities under this Agreement shall be governed exclusively by the provisions of the Intellectual Property Rights Annex, which constitutes an integral part of this Agreement.

#### Article 11 General Provisions

- Unless otherwise agreed in writing, all costs resulting from cooperation pursuant to this Agreement shall be the responsibility of the Party that incurs them.
- 11.2 The conduct of the activities provided for in this Agreement is subject to the availability of appropriated funds, personnel, and other resources.
- 11.3 Each Party shall conduct the activities provided for in this Agreement in accordance with the laws and regulations of its respective country.
- 11.4 Any dispute concerning the interpretation or application of this Agreement shall be settled by consultations between the Parties.
- 11.5 All information or equipment transmitted by one Party to the other Party under this Agreement and any related Project Annex shall be appropriate and accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information or equipment transmitted for any particular use or application by the receiving Party or any third party. Information or equipment developed jointly by the Parties shall be appropriate and accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or the appropriateness of equipment, nor its suitability for any particular use or application by either Party or by any third party.
- 11.6 This Agreement supersedes the 2003 Agreement.

### Article 12 Duration, Amendment and Termination

12.1 This Agreement shall enter into force upon signature by the Parties. Subject to Article 12.3, it shall remain in force for 5 years, and be automatically renewed for further 5-year periods unless either Party notifies the other in writing three months prior to the expiration of the first 5-year period or a succeeding 5-year period of its intent to terminate the Agreement.

- 12.2 This Agreement may be amended by written agreement of the Parties.
- 12.3 This Agreement may be terminated at any time at the discretion of either Party upon three months written notice to the other Party. All ongoing joint activities, projects and experiments not completed at the expiration or termination of this Agreement may be continued until their completion under the terms of this Agreement.

DONE at Washington this fourth day of April, 2007, in duplicate.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE JAPAN ATOMIC ENERGY AGENCY:

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#### **Annex on Intellectual Property Rights**

Pursuant to Article 10 of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant Project Annexes. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

#### I. Scope

- A This Annex is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereafter "cooperative entities") pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their cooperative entities.
- B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.
- C. This Annex addresses the allocation of rights, interests and royalties between the Parties. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex. The allocation between a Party and participants on behalf of this Party in cooperative activities, which shall be determined by the laws and practices of the Party's country, shall not be altered or prejudiced by application of this Annex.
- D. Disputes concerning intellectual property arising under this Agreement should be resolved through discussions between the concerned participating institutions, or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.
- E. Termination or expiration of this Agreement shall not affect the rights or obligations under this Annex.

#### II. Allocation of Rights

A. Each Party, subject to the restrictions of Article III. of this Annex, shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports and books directly arising from cooperation under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate

- the names of the authors of the work unless an author explicitly declines to be named. Each Party or its cooperative entities shall have the right to review a translation prior to public distribution.
- B. Rights to all forms of intellectual property, other than those rights described in paragraph II.A, above, shall be allocated as follows:
  - (1) Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host country with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the host institution.
  - (2) (a) For intellectual property created during joint research, the Parties or their cooperative entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example, in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relative contributions of the Parties and their cooperative entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the domestic laws of the Parties' countries, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their cooperative entities.
    - (b) If the Parties or their cooperative entities cannot reach agreement on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they shall share equally the reasonable cost of intellectual property protection in that country.
    - (c) A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant Project Annex. Otherwise, the allocation of rights to intellectual property will be in accordance with paragraph II-B/1.

(d) In the event that either Party believes that a particular joint research project under this Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties' countries, the Parties shall immediately hold discussions to determine the allocation of rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no agreement can be reached within a three month period from the date of the request for discussions, the Parties shall cease the cooperation in the project in question. Notwithstanding paragraphs II-B/2(a) and (b), rights to any intellectual property which has been created will be resolved in accordance with the provisions of Article I-D.

#### III. Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Agreement, each Party and its cooperative entities shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosure shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under the laws or regulations of its country, it will be, or may reasonably be expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

# TECHNICAL COOPERATION AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE KINGDOM OF SAUDI ARABIA

In recognition of the good relations existing between the Kingdom of Saudi Arabia and the United States of America (the Parties), and of the mutual desire to further this relationship,

And desirous of facilitating the transfer of technical knowledge, advice, skills and resources from United States to the Kingdom of Saudi Arabia in the areas of critical infrastructure protection and public security, including border protection, civil defense capabilities, and coast guard and maritime capabilities,

#### The Parties agree that:

- 1. The United States will make available for sale to the Saudi Arabian Ministry of Interior (MOI), for the purpose of assisting the Kingdom in the development of its capacity in the areas of critical infrastructure protection and public security, including border protection, civil defense capabilities, and coast guard and maritime capabilities, articles and services, including technical assistance as provided for in subsequent project-specific agreements between the Kingdom of Saudi Arabia and the United States. Such technical assistance may include provision of advice, training and equipment and other resources. The United States will provide the MOI with technical assistance directly or through U.S. Government contractors, or will facilitate the procurement by the Kingdom of Saudi Arabia of such knowledge, skills and resources from private U.S. organizations.
- 2. All U.S. assistance upon the advance of funds by the Kingdom of Saudi Arabia to the United States under this agreement will be done pursuant to subsequent project-specific agreements. The Kingdom of Saudi Arabia will pay all costs for services performed, equipment provided and expenses incurred by the United States under these project-specific agreements. The United States will pay for all costs of U.S. Government direct-hire employees assigned to the Kingdom of Saudi Arabia to perform services under this Agreement.
- 3. The Kingdom of Saudi Arabia will establish a dollar disbursement account in the United States Treasury. Any funds required by the United States for agreed-upon projects will be deposited by the Kingdom of Saudi Arabia in the account in such amounts and at such times as are mutually agreed, and the

- c. The first formal meeting of the Commission will take place in Saudi Arabia, at a mutually agreed-upon time. The two sides will strive to meet thereafter on a semi-annual basis, with one meeting in Riyadh and one meeting in Washington, D.C.
- d. The Joint Working Group on Critical Energy Infrastructure Protection will continue its ongoing efforts, pursuant to the December 7, 2006, Memorandum of Understanding between the United States and the Kingdom of Saudi Arabia. However, it will become a part of the Commission.
- 7. The Kingdom of Saudi Arabia agrees that no claim will be brought by Saudi Arabia against the United States or its employees or contractors that may arise as a result of the articles or services, including technical services furnished under this Agreement or under subsequent agreements for agreed-upon projects under this Agreement, and further agrees to hold the United States harmless against any and all claims that may arise as a result of the articles or services, including technical services furnished under this Agreement.
- 8. Assistance provided by the United States under this Agreement will be subject to U.S. law and regulations.
- 9. The duration of this Agreement will be five years, subject to revision or extension, as mutually agreed. This Agreement enters into force upon signature of the Parties. This Agreement may be terminated at any time by either Party with ninety days' advance written notice.

Signed at Riyadh on the 16th day of May, 2008, in duplicate, in the English and Arabic languages, both texts being equally authentic.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA

CONDOLETZZA RICE

Secretary of State

FOR THE GOVERNMENT OF THE KINGDOM OF SAUDI ARABIA

NAYIF BIN ABDULAZIZ AL-SAUD

Minister of Interior

### AGREEMENT TO EXTEND THE PROTOCOL

#### FOR COOPERATION IN THE FIELD OF FOSSIL ENERGY TECHNOLOGY DEVELOPMENT AND UTILIZATION BETWEEN

### THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

### THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA

The Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China (hereinafter referred to as "the Parties");

Noting the Protocol for Cooperation in the Field of Fossil Energy Technology Development and Utilization between the Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China of April 20, 2000 (hereinafter referred to as "the Protocol");

Desiring to continue to cooperate in the field of fossil energy technology development and utilization for their mutual benefit; and

Acting pursuant to Paragraph B of Article 15 of the Protocol;

#### HAVE AGREED AS FOLLOWS:

1. The Protocol is hereby extended for a five-year period from April 20, 2005, until April 20, 2010.

DONE at Beijing, this 5th day of April, 2005, in duplicate, in the English and Chinese languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

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FOR THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA:

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## JOINT STATEMENT OF INTENT BY THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

#### **AND**

THE CUSTOMS GENERAL ADMINISTRATION, THE GENERAL ADMINISTRATION OF QUALITY SUPERVISION, INSTPECTION AND QUARANTINE OF THE PEOPLE'S REPUBLIC OF CHINA CONCERNING EXPLORATION OF COOPERATION IN NUCLEAR AND OTHER RADIOACTIVE MATERIAL DETECTION

The Depart of Energy of the United States of America and the Customs General Administration of the People's Republic of China, the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, collectively herein the "Signatories",

Recognizing the increasing threats to global security posed by terrorists' attempts to acquire nuclear and radiological weapons of mass destruction;

Being convinced of the need to detect, deter, and where necessary, to prevent terrorist attempts to smuggle nuclear or radiological weapons and radioactive materials across international borders, to disrupt global trade or to make use of commercial shipping to further terrorist schemes;

Recognizing the high volume of trade between seaports in the

People's Republic of China and the United States, and the role of Chinese ports as intermodal transport hubs for cargo originating in many countries;

State their intention to explore future cooperation with respect to:

- 1. Safeguarding global maritime trade by enhancing, through modern technological means, the monitoring at major Chinese ports of high-risk containers that pose a potential terrorist threat, to ensure their in-transit security;
- 2. Engaging in cooperation to foster the Signatories' shared desire to combat illicit trafficking in nuclear and other radioactive material by terrorists and others.

Signed at this day of September 2, 2005, in duplicate, in the English and Chinese languages.

THE
DEPARTMENT
OF ENERGY OF
THE UNITED
STATES OF
AMERICA

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THE CUSTOMS
GENERAL
ADMINISTRATION
OF THE PEOPLE'S
REPUBLIC OF
CHINA

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THE GENERAL
ADMINISTRATION OF
QUALITY SUPERVISION,
INSTPECTION AND
QUARANTINE OF THE
PEOPLE'S REPUBLIC OF
CHINA

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## MEMORANDUM OF UNDERSTANDING AMONG THE GENERAL ADMINISTRATION OF CUSTOMS, THE GENERAL ADMINISTRATION OF QUALITY SUPERVISION, INSPECTION, AND QUARANTINE OF THE PEOPLE'S REPUBLIC OF CHINA

## THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA CONCERNING

## COOPERATION TO PREVENT THE ILLICIT TRAFFICKING IN NUCLEAR AND OTHER RADIOACTIVE MATERIAL

The General Administration of Customs (GACC) of the People's Republic of China, the General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) of the People's Republic of China (PRC), and the United States of America Department of Energy (DOE), hereinafter referred to collectively as the "Participants",

Desiring to cooperate to prevent the illicit trafficking in nuclear and other radioactive material through technical and methodological cooperation, including the improvement of systems for the detection and identification of these materials at jointly determined seaports of the PRC;

Recognizing the increasing threats to global security posed by terrorists' attempts to acquire nuclear and other weapons of mass destruction;

Being convinced of the need to detect, deter, and prevent the illicit trafficking in nuclear and other radioactive material, including terrorist attempts to disrupt global trade through or from international seaports or to make use of commercial shipping to further terrorist schemes;

Recognizing the high volume of trade between seaports in the PRC and the U.S, and the role of PRC seaports as international transport hubs for cargo originating in many countries;

Noting the Declaration of Principles Relating to Bilateral Customs Cooperation at Seaports to Enhance Security of Ocean-Going Containers between the General Administration of Customs of the People's Republic of China (GACC) and the United States Bureau of Customs and Border Protection (CBP) dated July 29, 2003, and

Emphasizing the principle of reciprocity and mutual benefits,

Have reached the following understanding:

#### I. SCOPE OF COOPERATION

- 1. The DOE, through its National Nuclear Security Administration, intends to provide the PRC Participants technical assistance funded by DOE in the form of equipment and materials, as well as training and services, for use at PRC seaports mutually determined by the Participants, for the purpose of detecting and preventing illicit trafficking in special nuclear material and other radioactive material.
- 2. For purposes of this Memorandum of Understanding (MOU), "special nuclear material" means plutonium, and uranium enriched to 20 percent or more in the isotope U-235. "Other radioactive material" includes, but is not limited to, radiological dispersal devices and radioactive sources suitable for use in radioactive dispersal devices. The Participants will mutually develop a written list of special nuclear material and other radioactive material.
- 3. DOE intends to provide the following technical assistance:
- a. provision to the PRC Participants of detailed technical specifications, from publicly available open literature sources, of radiation detection equipment appropriate for customs control conditions at PRC seaports, said specifications to be used by the PRC Participants to manufacture the said equipment and spare parts therefore within the PRC;
- b. support for installation at PRC seaports, mutually determined by the Participants, of the equipment identified in paragraph 3a: including testing, setup, and demonstration of the equipment as long as it meets the standards set by GACC, provided that DOE determines that the equipment manufactured by the PRC meets the technical specifications provided by DOE;
- c. delivery of all necessary spare parts kits, test equipment and maintenance equipment to maintain equipment referred to in paragraph 3a;
  - d. support for maintenance of the equipment referred to in paragraph 3a;
- e. training PRC Participants in detection of special nuclear material and other radioactive material, and in the proper use and maintenance of equipment referred to in paragraph 3a,

such training to be based on a training plan determined by the Participants; and

f. sharing with the PRC Participants of DOE's experience in providing technical assistance to other countries to prevent illicit trafficking in special nuclear material and other radioactive material, and DOE's best efforts to arrange visits by PRC representatives to facilities in those countries.

- 4. Upon reasonable request by DOE, representatives of DOE may make technical evaluations of the equipment supplied under this MOU, starting from the deployment date of the equipment, the content of, and procedure and arrangements for, the technical evaluations to be determined and written by the Participants.
- 5. The Participants intend to conduct technical workshops, site surveys, verification inspections, operational consultations and acceptance testing of equipment referred to in Section 1 paragraph 3a in accordance with a mutually developed written plan. Joint working groups of the Participants' staff members and their respective technical experts may be formed to exchange technical information and to make proposals on technical and training matters to ensure the effective implementation of this MOU.

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- 6. The terms of any technical assistance provided under this MOU are expected to be set forth in contracts or other written arrangements between the United States and PRC Participants or their designated implementing agents.
- 7. The PRC Participants intend to ensure that equipment and materials provided under this MOU are afforded priority processing to allow prompt engineering approvals, and equipment and materials deliveries to their ultimate destination at designated seaports within the PRC.

#### II. PROVISION OF INFORMATION

The PRC Participants are expected to furnish DOE or its designated representatives present in the PRC, in a format and according to conditions to be determined and written by the Participants, with information on any detection or seizures of illicitly trafficked special nuclear material and of other radioactive material referred to in Section I, paragraph 2 made as a result of the use of the equipment and materials supplied under this MOU.

#### III. NON-TRANSFER, NON-DISCLOSURE

1. Information obtained by a Participant's Government as a result of the technical assessment and implementation of cooperation under this MOU should not be disclosed to a third government or other third party without the prior consent of the other Participants.

Transfer of information by a Participant's Government, as required under international agreements to which such Government is a party, is not regarded as such disclosure to third governments or other third parties. The fact of any such transfer of information to a third government or other third party should be promptly notified to the other Participants in writing.

2. Unless the written consent of DOE has first been obtained, the PRC Participants are not to transfer title to, or possession of, any equipment provided by DOE pursuant to this MOU.

#### IV. TAX AND CUSTOMS TREATMENT OF ASSISTANCE

The Participants understand that neither DOE nor its implementing agents are to pay any taxes, duties or other charges on equipment, materials, training or services provided under this MOU.

The necessary components and spare parts for the manufacturing of the equipment in PRC with DOE funding and technical support are to be exempted from duties and VAT in the process of import.

#### V. GENERAL PROVISION

The MOU represents a political commitment by the Participants and does not constitute a legally binding agreement. All activities of each Participant should be carried out in accordance with the laws and regulations of that Participant's Government and applicable agreements to which that Participant's Government is party.

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- 1. Implementation of this MOU may begin upon signature by all Participants. The MOU is effective for a period of three years. If any Participant wishes to end its cooperation under the MOU, it should endeavor to provide at least 90 days' advance written notice to the other Participants. However, if no notification in writing is given to the other Participants no later than 90 days before expiration of the MOU, then the MOU is to be in effect for another three years.
- 2. Withdrawal of United States DOE or both PRC Participants will constitute termination of the MOU.
- 3. The MOU may be modified in writing by the Participants' consent. Any such modifications may take effect upon signature by the Participants.
- 4. The Participants intend to implement the cooperative activities contemplated by this MOU based on mutual respect and cooperative spirit.

Signed in Beijing, 19th of November, 2005, in triplicate, in the English and Chinese languages.

FOR THE GENERAL
ADMINISTRATION OF
CUSTOMS OF THE
PEOPLE'S REPUCLIC OF
CHINA

FOR THE GENERAL
ADMINISTRATION
OF SUPERVISION,
INSPECTION, AND
QUARANTINE OF THE
PEOPLE'S REPUCLIC
CHINA

FOR THE DEPARTMENT
OF ENERGY OF THE UNITED
STATES OF AMERICA

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#### TERMS OF REFERENCE FOR THE INTERNATIONAL PARTNERSHIP FOR ENERGY DEVELOPMENT IN ISLAND NATIONS

The undersigned national governments (collectively the "Participants") set forth the following Terms of Reference (TOR) for the International Partnership for Energy Development in Island Nations (EDIN), a framework for international cooperation to advance the development and deployment of renewable energy and energy efficiency technologies in island nations or territories within their jurisdiction.

#### 1. Purpose

The Participants intend to work together to increase the energy security of island nations or territories by promoting the dissemination of clean energy technologies, finance models, and best practice policies for Project Participants, while maximizing deployment within their own countries.

#### 2. Definitions

For the purposes of these TOR:

- (a) "Participants" means national governments of countries that are islands or have inhabited islands within their jurisdiction, have signed these TOR, and meet the following criteria:
  - The national government is a member of the Organisation for Economic Co-operation and Development (OECD);
  - The country has clean energy manufacturing facilities within its territory and/or has business entities that specialize in clean energy development;
  - The country has demonstrated interest in deploying renewable energy and energy efficiency technologies, as evidenced by laws and policies.
- (b) "Project Participants" means governments of island nations or territories that meet the following criteria:
  - Have a demonstrated commitment to deploying renewable energy and energy efficiency technologies, as evidenced by laws, policies, and government leadership;
  - Have been approved by the Steering Committee to work with EDIN on a project basis.

(c) "Clean energy" means renewable energy, energy efficiency, and grid integration and storage technologies.

#### 3. Areas of Cooperative Activities

- (a) Participants intend to give priority to collaboration that can advance common goals in clean energy deployment in the areas of renewable energy, energy efficiency, and grid integration and storage technology deployment both within island territories of Participants' countries and in specific Project Participants that the Participants determine, in conjunction with the Project Participant(s), to work with.
- (b) The Participants intend to promote removal of policy and financial barriers to clean energy deployment through policy guidance and expertise in the area of clean energy investment and financing.

#### 4. Forms of Cooperative Activities

Cooperative activities may take the following forms:

- 1. Fostering of research, demonstration, and deployment projects
- 2. Short-term visits and exchanges of experts
- 3. Trade missions and site visits
- 4. Organization of conferences, symposia, and workshops
- 5. Training of technical experts
- 6. Development of clean energy curricula for schools, universities, and trade institutions

#### 5. Steering Committee

- (a) The Participants expect to establish a Steering Committee composed of an equal number of representatives from each Participant, to manage EDIN's cooperative activities.
- (b) Unless otherwise determined by its members, the Steering Committee should meet annually to decide which common goals should be given priority, review the progress of cooperative activities, and plan EDIN's future activities. The Steering Committee may establish groups of experts to discuss specific issues.
- (c) Determinations of the Steering Committee should be made by consensus.
- (d) Each Participant should designate a Coordinator to maintain contact among Participants between Steering Committee meetings.

(e) The Steering Committee may invite national governments of island nations to join as Participants of EDIN, by signing the TOR. The Steering Committee may also invite governments of island nations or territories to participate in EDIN activities, at their own expense and under such terms and conditions as the Steering Committee may determine.

#### 6. Funding and Legal Considerations

- (a) Cooperative activities under these TOR are subject to the availability of appropriated funds, resources, and personnel.
- (b) Each Participant should conduct the cooperative activities contemplated by these TOR in accordance with the applicable laws, regulations, and policies to which it is subject.
- (c) Each Participant is responsible for the costs it incurs in participating in cooperative activities under these TOR.

#### 7. Commencement, Modification and Duration

- (a) Cooperation under these TOR may commence on the date of signature of at least three Participants.
- (b) A Participant that wishes to discontinue its participation in cooperative activities under these TOR should endeavour to give six months' written notice to the other Participants.
- (c) The TOR may be modified in writing by the Participants' mutual consent.
- (d) The Participants should review these TOR two years after they are signed, and revise them, if appropriate, to ensure that the objectives of EDIN are being met.

#### Terms of Reference for

## THE INTERNATIONAL PARTNERSHIP FOR ENERGY DEVELOPMENT IN ISLAND NATIONS

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For the Government of the United States of America

Date:

7/24/88

#### Terms of Reference for

## THE INTERNATIONAL PARTNERSHIP FOR ENERGY DEVELOPMENT IN ISLAND NATIONS

For the Government of New Zealand

Date: 24 Fely 2068

## Extension and Amendment of Implementing Arrangement No. 1 under the Agreement between the Department of Energy of the United States of America and the Commissariat à L'Energie Atomique of France for Cooperation in Advanced Nuclear Reactor Science and Technology

The Department of Energy of the United States of America and the Commissariat à L'Energie Atomique of France, hereinafter the "Parties," hereby extend and amend Implementing Arrangement No. 1 under the Agreement between the Department of Energy of the United States of America and the Commissariat à L'Energie Atomique of France for Cooperation in Advanced Nuclear Reactor Science and Technology (the AGREEMENT) of July 9, 2001, as follows:

I. Article VII is amended to read as follows:

Article VII. Duration, Amendment and Termination

- 1. This Implementing Arrangement shall enter into force upon signature, remain in force for 5 years (subject to Article VII.3), and be automatically renewed for further 5-year periods, so long as the ACREEMENT remains in force.
- 2. This Implementing Arrangement may be amended by written agreement of the Parties.
- 3. This Implementing Arrangement may be terminated upon 3 months advance notification in writing by either Party to the other Party.
- 4. All joint efforts and experiments not completed at the expiration or termination of this Implementing Arrangement may be continued until their completion under the terms of this Implementing Arrangement.

II. This extension and amendment shall enter into force upon signature, with effect from July 9, 2006.

DONE in duplicate, in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

Date: July 9, 2007

Place: Washington, D.C.

FOR THE COMMISSARIAT A L'ENERGIE ATOMIQUE

OF FRANCE:

Date:

Place:

July 134, 200 +

## AGREEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND THE INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE OF FRANCE

#### **FOR**

## COOPERATION IN RESEARCH AND DEVELOPMENT IN THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL AND FACILITIES AND IN NUCLEAR MATERIAL SAFEGUARDS TECHNOLOGIES

The Department of Energy of the United States of America (DOE) and the Institut de Radioprotection et de Sûreté Nucléaire of France (IRSN), hereinafter collectively the "Parties",

Recalling the "Statement of Intent Between the Department of Energy of the United States of America and the Institut de Radioprotection et de Sûreté Nucléaire of France Concerning the Physical Protection of Nuclear Material and Facilities, and Nuclear Material Control and Accounting Measures" signed September 17, 2003; and

Desiring to cooperate on research, development, testing, and evaluation to improve physical protection of nuclear materials and facilities, and to enhance nonproliferation of nuclear weapons through effective systems of nuclear material control, accountancy, verification, and advanced containment/surveillance technologies for international safeguards, with the aim of preventing the theft, diversion or unauthorized use of nuclear materials, and limiting the impact of malevolent action;

Hereby agree as follows:

#### Article 1 Objective

- 1.1 The objective of this Agreement is to establish a framework for cooperation between DOE, through its National Nuclear Security Administration, and IRSN for research, development, testing, and evaluation to improve physical protection of nuclear materials and facilities, and to improve nuclear material control, accountancy, verification, and advanced containment/surveillance technologies for international safeguards.
- 1.2 Cooperation between the Parties shall be on the basis of mutual benefit, equality, and reciprocity.

### Article 2 Areas of Cooperation

- 2.1 Classified information exchange is not permitted under this agreement.
- 2.2 The areas of cooperation under this Agreement may include, but are not limited to:
  - 2.2.1 Joint projects for the research, development, testing, and evaluation of non-destructive assay measurement technologies with spent or waste fuel, near real-time accounting technologies, design basis threat definitions and policies, spent fuel access control methodologies, intrusion detection methodologies, security assessment and review procedures, and access delay and barrier technologies;
  - 2.2.2 Exchange of abstracts, reports, evaluations, procedures, training, software, and equipment, or other information on programs for physical protection and nuclear safeguards.
- 2.3 Other areas of collaboration may be added by written agreement of the Parties.

## Article 3 Forms of Cooperation

- 3.1 Cooperation in accordance with this Agreement may include, but is not limited to, the following forms:
  - 3.1.1 Exchange of scientific and technical information and results of research and development;
  - 3.1.2 Exchange of scientists, engineers and other specialists, including those from industry, for participation in nuclear safeguards-related research, development, analysis, design and experimental activities conducted in research centers, laboratories, engineering offices, and other facilities and enterprises of the Parties or their designated representatives;
  - 3.1.3 Exchange of samples, materials, instruments and components for testing;
  - 3.1.4 Organization of seminars, workshops, and other meetings on agreed topics;
  - 3.1.5 Visits by a Party's specialist teams or individuals to the facilities of the other Party;

- 3.1.6 The use by one Party of the facilities owned or operated by the other Party. Such use of facilities shall be the subject of a separate written agreement between the Parties;
- 3.1.7 Cooperative programs and projects in which the Parties decide to share the work and costs. Such joint projects shall be the subject of a separate written agreement between the Parties.
- 3.2 Other specific forms of cooperation may be added by agreement of the Parties.

## Article 4 Project Action Sheets

Cooperative activities under this Agreement may be undertaken by the Parties or, as appropriate, laboratories or contractors of the Parties. Each cooperative activity that may involve the sharing of costs or that may give rise to intellectual property shall be described in writing in a project Action Sheet, which shall be subject to approval by the Permanent Coordinating Group (as provided for in Article 5). Such Action Sheets shall include detailed provisions for carrying out the specified forms of cooperation, including such matters as technical scope, exchange of business-confidential information, management, total costs, cost sharing and schedule. Each Action Sheet shall be subject to and shall refer to this Agreement.

## Article 5 Management

- 5.1 The Parties shall establish a Permanent Coordinating Group (PCG) to supervise the implementation of this Agreement. Decisions of the PCG shall be made on the basis of consensus.
- Each Party shall designate a Principal Coordinator who shall be responsible for carrying out the day-to-day management of the cooperation under this Agreement. The Principal Coordinators shall agree on specific details of cooperation in the technical areas listed in Article 2 of this Agreement, within policy guidelines established by the PCG. The Principal Coordinators shall be responsible for working-level contacts between the Parties in the areas of cooperation.
- 5.3 The PCG shall meet once each year, alternately in the United States and in France, or at such other times and places as agreed. At its meetings, the PCG shall evaluate the status of cooperation under this Agreement. This evaluation shall include a review of the past year's activities and accomplishments and of the activities planned for the coming year, an assessment of the balances of exchanges within each technical field or group of related technical fields listed in Article 2, and consideration of measures designed to ensure that such exchanges are mutually beneficial to the Parties. In addition, the PCG shall consider and act

on any major new proposals for collaboration. Principal Coordinators and other advisers to the Parties may, at the discretion of the PCG, participate in these annual meetings.

### Article 6 Exchange of Personnel

The following provisions shall apply concerning exchanges of personnel under this Agreement:

- Whenever an exchange of personnel is contemplated, each Party shall endeavor to ensure the selection of qualified personnel with skills and competence necessary to conduct the activities planned under this Agreement. Each such exchange of personnel shall be agreed in advance by an exchange of letters between the Parties, referencing this Agreement and its pertinent intellectual property provisions.
- 6.2 Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or its contractors.
- 6.3 Each Party shall pay for the travel and living expenses of its staff or its contractors while on assignment to the host Party, unless otherwise agreed in writing.
- 6.4 Each Party shall help locate adequate accommodations for the other Party's staff or contractors and their families on a mutually acceptable, reciprocal basis.
- 6.5 Each Party shall provide all appropriate assistance to the assigned staff of the other Party or its contractors and their families as regards administrative formalities, such as assistance in making travel arrangements.
- The staff and contractors of each Party shall conform to the general and specific rules of work and safety regulations in force at the host establishment.

# Article 7 Exchange of Equipment

By mutual agreement, a Party may provide equipment to be utilized in a joint activity. In that event, the following provisions shall apply:

7.1 The sending Party shall supply, as early as possible, a detailed list of the equipment to be provided, together with the relevant specifications and appropriate technical and informational documentation related to use, maintenance, and repair of the equipment.

- 7.2 Title to the equipment and necessary spare parts supplied by the sending Party for use in joint activities shall remain with the sending Party, and the equipment shall be returned to the sending Party upon completion of the joint activity, unless otherwise agreed.
- 7.3 Equipment provided pursuant to this Agreement shall be brought into operation at the host establishment only by agreement of the Parties.
- 7.4 The host establishment shall provide the necessary premises and shelter for the equipment; utilities such as electric power, water and gas; and normally, shall provide materials to be tested, in accordance with all technical requirements, which shall be as mutually agreed upon.
- 7.5 Responsibility for expenses, safekeeping, and insurance during the transport of equipment from the original location in the country of the sending Party to the place of entry in the country of the receiving Party shall rest with the sending Party. If the sending Party elects to have the equipment returned, it shall be responsible for expenses, safekeeping, and insurance during the transport of the equipment from the original port of entry in the country of the receiving Party to the final destination in the country of the sending Party.
- Responsibility for expenses, safekeeping, and insurance during the transport of equipment from the place of entry in the country of the receiving Party to the final destination in the country of the receiving Party shall rest with the receiving Party. If the sending Party elects to have the equipment returned, the receiving Party shall be responsible for expenses, safekeeping, and insurance during the transport of the equipment from the final destination in the country of the receiving Party to the original point of entry in the country of the receiving Party.
- 7.7 Responsibility for expenses, safekeeping, and insurance during the time period that the equipment is in use in the country of the receiving Party shall rest with the receiving Party unless otherwise agreed in writing.
- 7.8 Equipment provided pursuant to this Agreement for use in joint activities shall be considered to be scientific, not having a commercial character, and each Party shall make its best effort to obtain duty free entry.

## Article 8 Samples and Materials

Unless otherwise agreed in writing, the following provisions shall apply to the transportation and use of samples and materials provided by one Party to the other Party under this Agreement:

- 8.1 All samples and materials provided by the sending Party to the receiving Party shall remain the property of the sending Party, and shall be returned to the sending Party on request.
- Where one Party requests that the other Party provide a sample or material, the Party making the request shall bear all costs and expenses associated with the transportation of the sample or material from the location of the sending Party to its final destination.
- 8.3 Each Party shall promptly disclose to the other Party all information arising from the examination or testing of samples or materials exchanged under this Agreement. The Parties agree that business-confidential information (as defined in Section III of the Intellectual Property Rights Annex attached to this Agreement), which was developed prior to or outside the scope of this Agreement, shall remain business-confidential even though it is contained in the results of an examination or testing of samples or materials. Such information shall be identified as business-confidential by the Party asserting its business-confidential nature as soon as possible after disclosure of all information arising from the examination or testing is made to such Party and the other Party shall be immediately advised of that identification. All information identified as business-confidential shall be controlled as provided in Section III of the Intellectual Property Rights Annex.
- 8.4 It is further understood and agreed that a Party providing samples or materials to the other Party may also provide a partial or complete list of the types of information that may result from the examination or testing of such samples or materials and which are to be treated as business-confidential as defined in Section III of the Intellectual Property Rights Annex. All such business-confidential information is to be controlled as set out in Section III of that Annex.

## Article 9 Transfer of Information and Equipment

- 9.1 The Parties may exchange, as agreed on a mutually beneficial basis, scientific and technical information, documents, and results of research and development of work carried out under this Agreement. Such information shall be limited to that which the Parties have the right to disclose, either in their possession or available to them, relating to the types of cooperation described in Article 2.
- 9.2 Seminar proceedings and reports of joint activities carried out under this Agreement shall be published as joint publications, as agreed by the Parties.
- 9.3 The Parties agree that information developed and exchanged under this Agreement should be given wide distribution. Except as provided in Section III of the Intellectual Property Rights Annex to this Agreement, such information

- may be made available to the public by either Party through customary channels and in accordance with normal procedures of the Parties.
- 9.4 All information or equipment transmitted by one Party to the other Party under this Agreement and any related project Action Sheet shall be appropriate and accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information or equipment transmitted for any particular use or application by the receiving Party or any third party. Information or equipment developed jointly by the Parties shall be appropriate and accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or the appropriateness of equipment, nor its suitability for any particular use or application by either Party or by any third party.

#### Article 10 Additional Organizations

- 10.1 The Parties may invite public and private organizations in their respective countries to participate, at those organizations' own expense and subject to such terms and conditions as the Parties may specify, in cooperative activities under this Agreement.
- 10.2 Unless otherwise agreed in writing, the Parties shall not grant such organizations access to information, equipment or materials provided by one Party to the other Party under this Agreement without the prior written consent of the transmitting Party.
- 10.3 Each Party shall take measures to ensure that such organizations will not gain unauthorized access to safeguards and security information, nuclear and radiological materials, or other sensitive information or material.

## Article 11 Intellectual Property; Business-Confidential Information

The protection and allocation of intellectual property and the treatment of business-confidential information created or furnished in the course of cooperative activities under this Agreement shall be governed by the provisions of the Intellectual Property Rights Annex, which constitutes an integral part of this Agreement.

### Article 12 General Provisions

Unless otherwise agreed in writing, all costs resulting from cooperation pursuant to this Agreement shall be the responsibility of the Party that incurs them.

- 12.2 The conduct of the activities provided for in this Agreement is subject to the availability of appropriated funds, personnel, and other resources.
- 12.3 Each Party shall conduct the activities provided for in this Agreement in accordance with the laws and regulations of its respective country.
- 12.4 Any dispute concerning the interpretation or application of this Agreement shall be settled by consultations between the Parties.

#### Article 13 **Duration, Amendment and Termination**

- 13.1 This Agreement shall enter into force upon signature, and (subject to Article 13.3), remain in force for 5 years, and be automatically renewed for further 5-year periods unless either Party notifies the other in writing three months prior to the expiration of the first 5-year period or a succeeding 5-year period of its intent to terminate the Agreement.
- 13.2 This Agreement may be amended by written agreement of the Parties.
- This Agreement may be terminated at any time at the discretion of either Party 13.3 upon 3 months written notice to the other Party. All ongoing joint activities, projects and experiments not completed at the expiration or termination of this Agreement may be continued until their completion under the terms of this Agreement.

DONE in duplicate.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA: FOR THE INSTITUT DE RADIOPROTECTION ET DE SURETE NUCLEAIRE OF FRANCE:

DATE: 06 June 2006

PLACE: Washington DC

DATE:

**PLACE** 

Paris, le 20 juin 2006 Vu pour accord et transmission,

Pour le Ministre délégué à l'industrie

et par délégation

Le Haut fonctionnaire de défense

Emmanuel SARTORIUS

#### Annex on Intellectual Property Rights

Pursuant to Article 11 of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant project Action Sheets. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

#### I. Scope

- A This Annex is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereafter "cooperative entities") pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their cooperative entities.
- B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.
- C. This Annex addresses the allocation of rights, interests and royalties between the Parties. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex. The allocation between a Party and participants on behalf of this Party in cooperative activities, which shall be determined by the laws and practices of the Party's country, shall not be altered or prejudiced by application of this Annex.
- D. Disputes concerning intellectual property arising under this Agreement should be resolved through discussions between the concerned participating institutions, or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.
- E. Termination or expiration of this Agreement shall not affect the rights or obligations under this Annex.

#### II. Allocation of Rights

A. Each Party, subject to the restrictions of Article III of this Annex, shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports/books directly arising from cooperation under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate

the names of the authors of the work unless an author explicitly declines to be named. Each Party or its cooperative entities shall have the right to review a translation prior to public distribution.

- B. Rights to all forms of intellectual property, other than those rights described in paragraph II.A, above, shall be allocated as follows:
  - (1) Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host country with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the host institution.
  - (2) (a) For intellectual property created during joint research, the Parties or their cooperative entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example, in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relative contributions of the Parties and their cooperative entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their cooperative entities.
    - (b) If the Parties or their cooperative entities cannot reach agreement on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they shall share equally the reasonable cost of intellectual property protection in that country.
    - (c) A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant Action Sheet. Otherwise, the allocation of rights to intellectual property will be in accordance with paragraph II-B/1.

(d) In the event that either Party believes that a particular joint research project under this Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties' countries, the Parties shall immediately hold discussions to determine the allocation of rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no agreement can be reached within a three month period from the date of the request for discussions, the Parties shall cease the cooperation in the project in question. Notwithstanding paragraphs II-B/2(a) and (b), rights to any intellectual property which has been created will be resolved in accordance with the provisions of Article I-D.

#### III. Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Agreement, each Party and its cooperative entities shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosure shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under the laws or regulations of its country, it will be, or may reasonably be expected to become unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

# U.S. DOE, Sweden STEM-AB Volvo/Mack Trucks Program on Advanced Vehicle Technology

Noting the "Implementing Arrangement between the Government of the United States of America and the Government of the Kingdom of Sweden on Cooperation on Research and Development, New Technologies, New Products, New Services, and Enhanced Resource Base for Renewable Energy", signed by the governments of the United States and Sweden of June 28, 2007.

#### Objective of the Program

It is intended that the program will address common technical interests of U.S. DOE, the Swedish Energy Agency and the Volvo Group, including the application of bio-fuels to heavy-duty diesel engines, advanced diesel engine-transmission system design and hybrid propulsion technology for commercial vehicles. The program will demonstrate the benefits of international cooperation between countries and companies with specific technical expertise and global reach – to insure a realistic pathway to commercialization.

In support of the program, U.S. DOE, Swedish Energy Agency and Volvo Group intend to explore the possibility of providing the following:

- Analysis of the impact of different bio-fuels on diesel engines in an effort to increase efficiency and fuel economy, and reduce greenhouse gas emissions of new long haul trucks
- Advanced 'narrow-band' diesel engine and transmission system development

• Hybrid vehicle technology for heavy-duty engines, coupled with waste heat recovery.

June 30, 2008

Alexander Karsner Assistant Secretary Energy Efficiency and Renewable Energy U.S. Dept. of Energy Tomas Kåberger Director General Swedish Energy

Agency

eif Johansson

Chief Executive Officer

Volvo Group

# IMPLEMENTING ARRANGEMENT CONCERNING IRRADIATION OF STRUCTURAL MATERIAL SPECIMENS IN THE PHENIX REACTOR

#### Under the

#### Agreement between

The Department of Energy of the United States of America and

The Commissariat à l'Energie Atomique of France
For Cooperation in Advanced Nuclear Reactor Science and Technology

The Department of Energy of the United States of America (DOE) and the Commissariat à l'Energie Atomique of France (CEA), referred to hereafter as the "Parties";

NOTING the Agreement between the Department of Energy of the United States of America and the Commissariat à l'Energie Atomique of France for Cooperation in Advanced Nuclear Reactor Science and Technology of September 18, 2000 (the "Agreement"), which includes advanced reactor materials irradiation development and testing as an area of cooperation between the Parties;

NOTING that the Parties have respectively developed research programs in the field of minor actinide transmutation and in particular in the accelerated driven systems,

NOTING that the CEA is operating the PHENIX experimental reactor particularly for the development of these research programs;

NOTING that the Parties desire to carry out an experimental irradiation project in the PHENIX experimental reactor to test various types of structural material specimens under selected conditions;

NOTING the Parties' determination to collaborate on a "MATRIX-SMI" program (SMI: Structural Material Irradiation) concerning the irradiation of various structural material specimens in the PHENIX reactor;

DO HEREBY AGREE AS FOLLOWS:

#### **ARTICLE 1 – DEFINITIONS**

For purposes of this Implementing Arrangement, the following definitions shall apply:

**PROGRAM**: the "MATRIX-SMI" program concerning the irradiation in the PHENIX experimental reactor of structural material specimens provided by both Parties as defined in the technical and financial appendix attached to this Implementing Arrangement as Appendix I and constituting an integral part hereof. The PROGRAM constitutes "joint research" within the meaning of section II-B-2 (C) of Annex I to the Agreement.

**RESULTS**: irradiated structural material specimens and analyses results pertaining to specimens arising from the PROGRAM as well as data pertaining to the PHENIX experimental reactor required for RESULTS interpretation calculations.

**KNOWLEDGE**: all know-how, data, specifications, software or any other type of information necessary to carry out the PROGRAM belonging to a Party prior to execution of the PROGRAM. A list of KNOWLEDGE is set forth in Appendix II attached to this Implementing Arrangement and constituting an integral part hereof.

#### **ARTICLE 2 - PURPOSE**

- 2.1 The purpose of this Implementing Arrangement is:
  - to set down the terms and conditions according to which the Parties shall collaborate to carry out the PROGRAM, and

- to set down the rules governing the assignment of the RESULTS ownership and the conditions limiting the use of the same.
- 2.2 This Implementing Arrangement is subject to and governed by the Agreement. In case of any inconsistency between this Implementing Arrangement and the Agreement, the terms of the Agreement shall prevail.

#### ARTICLE 3 - PROGRAM FINANCIAL AND IN-KIND CONTRIBUTIONS

- 3.1 Contributions by the Parties, subject to the availability of appropriated funds, are:
  - 3.1.1 DOE contributions shall consist of:
    - The manufacture and inspection of all its structural material specimens
    - The transportation of structural material specimens provided by the DOE from USA to the PHENIX Reactor
    - A contribution in cash covering 50% of the following costs for:
      - the drafting of the files and drawings associated with the irradiation device,
      - the procurement, assemblies, controls of the irradiation device,
      - the CEA/PHENIX facility safety analyses induced by the introduction of the irradiation device,
      - the irradiations (irradiation monitoring and analysis file, neutrons),
      - the transportation of the irradiation device and irradiated specimens from the PHENIX Reactor to the PHENIX laboratories for device dismantling and specimens conditioning.
    - The organization of transportation of the irradiated structural material specimens from PHENIX to the USA
    - The post-irradiation examination of irradiated structural material samples provided by the DOE
    - The written report on PIE and contribution to the final common CEA-DOE report
  - 3.1.2 The CEA contribution shall consist of:
    - The manufacture and inspection of all its structural material specimens
    - The transportation of structural material samples provided by CEA-Saclay to the PHENIX Reactor
    - A contribution in cash covering 50% of the following costs:
      - the drafting of the files and drawings associated with the irradiation device,
      - the procurement, assemblies, controls of the irradiation device,
      - the identification of both CEA and DOE specimens,
      - the CEA/PHENIX facility safety analyses induced by the introduction of the irradiation device,
      - the irradiations (irradiation monitoring and analysis file, neutrons),

- the transportation of the irradiation device and irradiated samples from the PHENIX Reactor to the PHENIX laboratories for device dismantling and specimens conditioning,
- the irradiations (irradiation monitoring and analysis file, neutrons).
- The organization of the transportation and transportation of irradiated structural material samples from the PHENIX reactor to Saclay
- The PIE of irradiated structural material samples provided by the CEA
- The written report on PIE and contribution to the final common CEA-DOE report
- 3.2 The provisional PROGRAM schedule, including the proposed contribution schedule, is described in detail in Appendix I.

#### **ARTICLE 4 - FINANCIAL ACCOUNTING**

- 4.1 The Parties estimate that the total cost of the five-year PROGRAM will be 1,411,120 Euros
  - 4.1.1 Subject to Article 3.2, the DOE's contribution to the PROGRAM shall be 705,560 Euros and will be payable in U.S. dollars, in 5 annual installments, within 60 days after receipt of invoices issued by the CEA. Each annual invoice will be sent to the DOE on the anniversary date of the signing of this Implementing Arrangement and will include U.S. dollar to Euro conversion charges, at the rate given by "Banque de France" on such anniversary date, payable by the DOE.
  - 4.1.2 The DOE intends to make an initial payment of 140 000 Euros within 60 days of receipt of invoice following this Implementing Arrangement being entered into force.
- 4.2 The DOE will pay its contribution to the PROGRAM in accordance with applicable DOE financial disbursement procedures, directed to the following payee:

Bank account:

BNP, 7 Place Vendôme, 75001 Paris, France

Bank code: 30004 - branch office code: 00601 - account n°: 00021518978 - Clé RIB: 21

4.3 The CEA shall maintain or cause to be maintained books of account, in accordance with generally accepted accounting practices, concerning the PROGRAM contributions and expenditures. On an annual basis for the duration of the PROGRAM, the CEA shall provide an annual financial report concerning the PROGRAM to the Steering Committee established under Article 5 of the Agreement.

4.4 At its sole cost, the DOE shall have the right to audit the account maintained under Article 4.3 of this Implementing Arrangement. Not more than one such audit will be performed in any U.S. fiscal year.

#### **ARTICLE 5 - MANAGEMENT**

#### 5.1 Tracking

Each Party shall appoint a Technical Contact who will be entrusted with continual technical tracking of the PROGRAM including the exchanges of KNOWLEDGE. Each Technical Contact will report to his/her management concerning the progress of the PROGRAM.

#### 5.2 Exchange of KNOWLEDGE

- 5.2.1 All KNOWLEDGE in the possession of the Parties necessary for the dimensioning of structural material specimens, the drafting of irradiation files (a technical file and a safety file), and the interpretation of PIE results, will be exchanged in the form of referenced technical documents.
- 5.2.2 Technical documents will be circulated in the English language.

#### 5.3 Circulation of RESULTS

- 5.3.1 All RESULTS pertaining to the irradiated structural material specimens and analyses results arising from the PROGRAM will be circulated between the DOE and the CEA in the form of technical reports, written in the English language.
- 5.3.2 A synthesis Report covering the entire PROGRAM will be jointly drafted in the English language by the Parties upon completion of the PROGRAM.
- 5.3.3 Three technical meetings of specialists will be held as a minimum in order to ensure monitoring and the correct performance of the PROGRAM. The location of the said meetings shall be jointly agreed upon by the Technical Contacts. Minutes shall be drafted for all meetings.

#### ARTICLE 6 - PACKAGING-TRANSPORT- INSURANCE

Each Party shall take in charge the transportation of the structural material samples from its own installations to the PHENIX Reactor and the transportation of the irradiated structural material samples from the PHENIX Reactor to its own installations.

#### **ARTICLE 7 - INTELLECTUAL PROPERTY**

7.1 The protection and allocation of intellectual property arising from the activities conducted under this Implementing Arrangement shall be governed by Annex I to the Agreement.

7.2 A technology management plan within the meaning of section II.B. of Annex I to the Agreement is set forth in Appendix III attached to this Implementing Arrangement and constituting an integral part hereof.

#### **ARTICLE 8 - LIABILITY**

Without prejudice to Article 8 of the Agreement and in its capacity as the nuclear operator, the CEA shall bear the financial consequences of its liability as provided for by the law and regulations of France concerning France's implementation of the Paris Convention on Third Party Liability in the Field of Nuclear Energy of July 29, 1960, and its protocols.

#### ARTICLE 9 - SHUTDOWN OF THE PHENIX REACTOR

- 9.1 In the event of a decision to shut down the operation of the PHENIX Reactor, the CEA shall notify the DOE of the said decision as quickly as possible by registered letter.
- 9.2 In the event of the shutdown of the PHENIX Reactor, the Parties shall consult as soon as possible on the distribution of RESULTS generated and to be generated by the PROGRAM, the disposition of material used in the PROGRAM and the disposition of unspent financial contributions in the possession of the CEA.

#### ARTICLE 10 - TERM, AMENDMENT AND TERMINATION

- 10.1 This Implementing Arrangement shall enter into force upon signature and shall remain in force for 5 years, so long as the Agreement remains in force. It may be amended or extended by written agreement of the Parties providing the Agreement remains in force.
- In the event of budgetary restrictions, significant restructuring and/or reorientation of a Party's programs, or in the event that access to a Party's facilities is limited for any reason whatsoever, or should a Party's performance of its undertakings under this Implementing Arrangement be prevented, limited or hindered by any other circumstance, the Parties shall meet as quickly as possible in order to agree jointly to a revision of the Implementing Arrangement or its prolongation in time (to ensure continuation of the PROGRAM and its completion), or the early termination of the Implementing Arrangement, under conditions that are fair to the Parties.
- 10.3 The provisions set down in Article 8 shall remain in effect notwithstanding the expiration or termination of this Implementing Arrangement.
- 10.4 Either Party may terminate this Implementing Arrangement by giving 6 months written notice to the other Party.
- 10.5 Any activities not completed upon expiration or termination of this Implementing Arrangement may be continued to completion under the terms of this Implementing Arrangement.

DONE in duplicate in the English language.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:	FOR THE COMMISSARIAT A PENERGIE ATOMIQUE:
Date: 24 August 2005	Date: 7 Sept Jon 2005
Place: Washington DC.	Place: PATE

#### APPENDIX I TECHNICAL AND FINANCIAL APPENDIX

#### **TECHNICAL APPENDIX:**

#### Experimental grid

The irradiation experimental grid was commonly defined and approved by the PROGRAM participants (CEA and DOE) during the technical exchanges performed within the framework of the DOE/AFCI-CEA collaboration WP3 "materials and targets":

The experimental grid is given in the following table:

#### Materials' Compositions and Heat Treatments for Matrix-SMI

Material	Composition	Material Code	Heat treatment	Types of samples (tensile, TEM, CT) Number of samples split evenly over two irradiation positions	Material provided by
EP-823	83.9 Fe, 11.7 Cr, 1.1 Si, 0.73 Mo, 0.63 W, 0.65 Ni, 0.54 Mn, 0.34 V, 0.26 Nb and 0.17	A	Normalize at 1060C for 1 hr and AC Temper at 730C for 2 hrs and AC	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (12)	Stuart Maloy
НТ-9	Fe-11.95Cr- 0.6Ni-0.2C-1Mo- 0.6 Mn-0.4Si- 0.3V	В	Normalize at 1040C for 30 min. and AC Temper at 760C for 1 hr and AC	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (8)	Todd Allen
Mod 9Cr- 1Mo	Fe-9.24Cr- 0.47Mn-0.96Mo- 0.16Ni-0.28Si- 0.21V	С	Normalize at 1038C for 1 hr. and AC Temper at 760C for 1 hr and AC	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (8)	Stuart Maloy
HCM12A (T122)	Fe-10.54Cr- 1.89W-1.02Cu- 0.64Mn- 0.39Ni- 0.30Mo-0.27Si- 0.19V-0.11C- 0.064Nb-0.012P- 0.0032S-0.0005A1	D	Normalized at 1050°C and tempered at 770°C	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (12)	Todd Allen
3Cr-W- V-Ta	Fe-3.0Cr-3.0W- 0.41Mn-0.2V- 0.16Si- 0.1C- 0.09Ta	UA	Normalized at 1050°C for 0.5 hr, AC Tempered at 750°C for 1 hr., AC	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (12)	Roger Stoller/ Ron Klueh

3Cr-W-V	Fe-3.0Cr-3.0W- 0.41Mn-0.2V- 0.16 Si- 0.1C	UB	Normalized at 1050°C for 0.5 hr, AC Tempered at 750°C for 1 hr., AC	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (12)	Roger Stoller/ Ron Klueh
NF 616	Fe-8.82Cr- 1.87W-0.468Mo- 0.45Mn- 0.194V- 0.174Ni-0.102Si- 0.109C	Е	Normalizing 1070°C x 2 hr(Air- cooling) Tempering 770°C x 2 hr (Air- cooling)	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (14)	Todd Allen
14WT	Fe-14Cr-3W- 0.4Ti	UC	MA: Extruded at 850C + 50% hot roll at 600C +1050C/1h	Tensile (0.5 mm) specimens (12), TEM (16), Compact Tension (14)	Roger Stoller
12YWT	Fe-12Cr-3W- 0.4Ti-0.25 Y203	FA	MA: As-processed	Tensile (0.5 mm) specimens (12), TEM (16)	Roger Stoller
14YWT	Fe-14Cr-3W- 0.4Ti-0.25 Y203	K	MA: Extruded at 850C + 50% hot roll at 600C +1050C/1h	Tensile (0.5 mm) specimens (12), TEM (16), Compact Tension (14)	Roger Stoller
Inconel 800H	Fe-31.59Ni- 20.42Cr-0.76Mn- 0.57Ti-0.5Al- 0.42Cu-0.13Si- 0.069C-0.014P- 0.001S	L	1176°C for 1 inch of thickness plus 2 hours.	Tensile (0.75 mm) specimens (12), TEM (16), Compact Tension (14)	Todd Allen

The structural material specimens will be implemented in the irradiation device, designed and procured by the CEA.

The structural material specimens are prepared by both Parties in order to fit the technical specifications given by the CEA Technical Contact.

The specimens are distributed in the device taking into account the local irradiation conditions and anticipated dpa, deduced from the axial distribution of flux and temperature.

Irradiation is scheduled for the four last reactor cycles, that is, insertion into the reactor planned at the end of June 2005 (for a PHENIX restart in September 2005).

#### Technical content

The technical content covers the manufacturing, irradiation and post-irradiation examination (PIE) results of the structural material defined in experimental grid. It covers:

1. Definition of the technical requirements of the irradiation by the CEA.

- 2. Provision by the DOE and the CEA of the exact chemical composition of the specimens.
- 3. Procurement by the DOE and the CEA of all structural material in order to prepare the specimens according the experimental grid.
- 4. Manufacture and inspection of structural material specimens by the DOE and the CEA; each party is responsible for the manufacturing of its specimens.
- 5. Transportation of structural material specimens provided by the CEA and the DOE to the PHENIX Reactor.
- 6. Drafting the files and drawings associated with the irradiation device.
- 7. Procurement, assemblies, controls of the irradiation device.
- 8. Implementation of specimens in the irradiation device.
- 9. CEA/PHENIX facility safety analyses induced by the introduction of the irradiation device under quality assurance.
- 10. Irradiations (irradiation monitoring and analysis file, neutrons).
- 11. Transportation of irradiation device and irradiated samples from the PHENIX Reactor to the PHENIX laboratories for the device dismantling and specimens conditioning (specimens will be cleaned versus sodium prior to transportation.
- 12. Organization of transportation and transportation of irradiated structural material samples from PHENIX to the DOE and the CEA hot cells for Post-irradiation examination (PIE).
- 13. PIE of irradiated structural material samples by the DOE and the CEA.
- 14. Written report on PIE and contribution to the final common DOE-CEA report.

All the files and reports will be written by the CEA, with the exception of the DOE specimens manufacturing reports which will be written by the DOE specimens manufacturer and the DOE specimens PIE, and of the final DOE-CEA synthesis report. In the context of file requirements, participants' KNOWLEDGE associated with their national programs will be exchanged

#### **DISTRIBUTION OF TASKS**

Task	Actor
Definition of the technical requirements for the	CEA
irradiation (size of samples,)	
Provision of the exact chemical composition of	CEA, DOE
the specimens	
Procurement of all structural material in order to	CEA, DOE
prepare the specimens according to the	
experimental grid	
Manufacture and inspection of structural material	CEA, DOE
specimens, monitoring of the suppliers	
Transportation of structural material specimens to	CEA, DOE
PHENIX	
Specimens identification before irradiation	CEA
Drafting the files and drawings associated with	CEA
the irradiation device	
Procurement, assemblies, controls of the device,	CEA
monitoring of suppliers	
Implementation of specimens in the irradiation	CEA
device	
CEA/PHENIX facility safety analyses under	CEA
quality assurance (ISO 9001)	
Irradiations (irradiation monitoring and analysis	CEA
file, neutrons).	
Transportation of irradiation device and irradiated	CEA
samples from PHENIX Reactor to the PHENIX	
laboratories	
Device dismantling and specimens conditioning	CEA
(specimens will be cleaned versus sodium)	
Organization of DOE specimens transportation	DOE
Organization of CEA specimens transportation	CEA
Post-irradiation examination of CEA specimens	CEA
Post-irradiation examination of DOE specimens	DOE
Irradiation conditions file analysis Report	CEA
Final irradiation report	CEA, DOE
Irradiated device management	CEA
Specimens cleaning, effluent management	CEA

#### **KEY DATES**

- Confirmation of experimental grid: October 2004
- Confirmation of chemical composition of specimens December 2004
- Procurement of specimens to PHENIX: 30 March 2005
- Insertion into reactor: June 2005
- Removal from reactor: November 2008
- Transfer of irradiated specimens: June 2009
- Post-irradiation examination from June 2009
- Final report: December 2009

This schedule is dependent on PHENIX operation and may be revised.

#### FINANCIAL APPENDIX

Table No. 2 provides an estimate of the PROGRAM cost, broken down by task and the distribution of costs between the Parties.

TABLE N°2:PROGRAMME COS	I ESTIMATE IN	EURUS
Tasks	Amount	Distribution of costs
Structural material specimens :		
Definition of the technical requirements for	6 550 €	50% CEA, 50% DOE
the irradiation (size of samples,)		
Provision of the exact chemical composition		Outside the scope of the Agreement
of the specimens		
Procurement of all structural material in		Outside the scope of the Agreement
order to prepare the specimens according to		, agreement
the experimental grid		Outside the scope of the
Manufacture and inspection of structural		Agreement
material specimens, monitoring of the		
suppliers Transportation of DOE structural material		Outside the scope of the
specimens to PHENIX		Agreement
Transportation of CEA structural material		Outside the scope of the
specimens to PHENIX		Agreement
Specimens identification before irradiation	6 550 €	50%CEA, 50%DOE
<u> </u>		
Irradiation device :	13 100 €	50%CEA, 50%DOE
Drafting the files and drawings associated	13 100 C	30,000,000
with the irradiation device		
Procurement, assemblies, controls of the	72 474 €	50%CEA, 50%DOE
device, monitoring of suppliers  Implementation of specimens in the		
irradiation device	3 450	50%CEA, 50%DOE
Irradiation device  Irradiation in the PHENIX Reactor		
CEA/PHENIX facility safety analyses under		
quality assurance (ISO 9001)	20 960 €	50%CEA, 50%DOE
Irradiations (irradiation monitoring).	47 160 €	50%CEA, 50%DOE
Neutrons Cycle N°1	300 000 €	50%CEA, 50%DOE
Neutrons Cycle N°2	300 000 €	50%CEA, 50%DOE
Neutrons Cycle N°3	300 000 €	50%CEA, 50%DOE
Neutrons Cycle N°4	300 000 €	50%CEA, 50%DOE
Management of the irradiated specimens		
Transportation of irradiation device and		
irradiated specimens from PHENIX Reactor	5 240 €	50%CEA, 50%DOE
to the PHENIX laboratories		
Device dismantling and specimens		
conditioning (Sodium removal and effluent	14 480 €	50%CEA, 50 %DOE
management)		

Organization of the DOE and CEA		Outside the scope of the
specimens transportation		Agreement
Loading of CEA and DOE specimens in		
specified containers provided by the CEA	5 240 €	50%CEA, 50%DOE
and the DOE		
Post-irradiation examination (PIE),		
synthesis		
Irradiation Conditions File Analysis Report	10 916 €	50%CEA, 50%DOE
PIE of the CEA specimens		Outside the scope of the Agreement
PIE of the DOE specimens		Outside the scope of the Agreement
Synthesis Report	Each party contributes to the report.	50%CEA, 50%DOE
Irradiated device management	5 000 €	50%CEA, 50%DOE
Total amounts	1 411 120 €	
CEA contribution	705 560 €	
DOE contribution	705 560 €	

Table No. Schedule for the estimate of expenditure and distribution of expenditure between the Parties.

	2005	2006	2007	2008	2009	Task cost
IRRADIATION DEVICE						
Specimens specifications and identification	13 100					13 100
Drafting the files and drawings	13100	0	0	0		13100
Procurement, assemblies, controls,	72 474	0	0	0		72 474
Specimens implementation	3450			0		3450
FILES						
CEA-PHENIX facility safety analyses under QA	20 960	0	0	0		20 960
IRRADIATION PHENIX:						
Irradiation monitoring	7860	15 720	15 720	7860		47 160
Irradiation (Neutrons)	200 000	400 000	400 000	200 000		1 200 000
Irradiation Conditions File Analysis Report				10 916		10 916
Irradiation device transportation				5 240		5 240
Device dismantling and specimens conditioning				10 480	10 480	10 480
Implementation in specified containers				5 240	5 240	5 240
Irradiated device management				5 000	5000	5 000
Specimens cleaning, effluent management				4 000	4000	4 000
Total	330 944	415 720	415 720	224 016	24 720	1 411 120
CEA contribution	165 472	207 860	207 860	112 008	12 360	705 560
DOE contribution	165 472	207 860	207 860	112 008	12 360	705 560
DOE Annual Installment	140 000	140 000	140 000	140 000	145 560	705 560

#### APPENDIX II LIST OF KNOWLEDGE

#### KNOWLEDGE exchange pertains to:

- 1. Experimental grid
- 2. Specifications for the specimens shape and size
- 3. Chemical composition of specimens
- 4. Characteristics of irradiation device
- 5. Irradiation conditions (temperature, neutron flux,..)
- 6. Information required for the Technical and Safety Files
- 7. Characteristics of containers for irradiated specimens transportation
- 8. Irradiation Conditions File Analysis Report

#### APPENDIX III TECHNOLOGY MANAGEMENT PLAN

#### Ownership rights

Each Party shall remain the owner of the KNOWLEDGE, whether patented or not, that it held prior to execution of the Implementing Arrangement.

RESULTS, other than inventions arising from the PROGRAM, shall be construed as owned by the Party creating the RESULTS. However, each Party may use or reproduce the said RESULTS without the consent of the other Party. With respect to publication or disclosure of the said RESULTS, except for manufacturing data, any such RESULTS delivered to one Party shall be subject to the unlimited right to publish or to the disclosure of such RESULTS for any purpose.

For inventions, i.e., subject matter that is or may be patentable, the Parties shall agree jointly to an equitable allocation of rights and responsibilities within a reasonable length of time from the time a Party becomes aware of the creation of an invention, taking into account the relative contributions of the Parties and other factors deemed appropriate.

#### **Usage of RESULTS**

Each Party shall have the right to make use of RESULTS, patented or not, obtained within the framework of the PROGRAM for its own research requirements, free of cost.

The industrial and commercial use of RESULTS, patented or not, may be performed through transfer of license or licenses to third parties.

Licenses may be transferred by each Party or any third party designated by the latter. The licensee and main license terms and conditions should be established in consideration of market conditions and the joint interest of the Parties.

# Project Annex Repository Geoscience and PA Technology Development Under the

Agreement Between the Department of Energy Of the United States of America and the Japan Atomic Energy Agency

for Cooperation in Research and Development in Nuclear Science and Energy

#### **Preamble**

This Project Annex is developed under the auspices of Agreement in Research and Development in Nuclear Science and Energy of April 4, 2007, hereinafter referred to as the "Agreement" between the Department of Energy of the United States of America (DOE) and the Japan Atomic Energy Agency (JAEA), hereinafter the "Parties," and is subject to the provisions therein.

This Project Annex establishes a framework, terms and conditions for the Parties' collaboration on the "Repository Geoscience and PA Technology Development" project ("the Project"), to be carried out through cooperative research between JAEA and DOE's Lawrence Berkeley National Laboratory (LBNL). It is designed to further develop science and technologies and to contribute to the knowledgebase related to radioactive waste management in order to ensure the safety and cost effectiveness of nuclear waste repository program. The Parties anticipate that the technology developed as part of this Project will help in furthering the confidence in the respective nuclear waste repository program.

#### Section 1 - Background

The "Repository Geoscience and PA Technology Development" Project will couple the scientific expertise available in the United States with the data sets available in the Japanese High Level Nuclear Waste (HLW) program to further the science and technologies for nuclear waste repository and to contribute to the knowledgebase for global consumption. To this end, JAEA is currently constructing two underground rock laboratories: one at Horonobe in sedimentary rock and another at Mizunami in crystalline rock. In addition, JAEA has an advanced aboveground facility, ENTRY, to conduct large-scale laboratory experiments. Vast amount of quality data have been coming out from these to site investigation program and PA, to which DOE's expertise and tools can be applied, tested and improved. Furthermore, JAEA is undertaking the development of repository science knowledgebase. DOE can contribute to the accumulation of the knowledgebase from its experience with the Yucca Mountain Program and elsewhere for global significance.

#### Section 2 - Project

2.1 In light of JAEA's extensive field and laboratory studies at Horonobe and Mizunami sites and at the ENTRY facility, the primary objective of the Project is to (a) improve the understanding of the fundamental physics and chemistry that governs the processes that will play a significant role in the safety of radioactive waste disposal, (b) further develop characterization and predictive technologies of release and transport of radionuclides in

- heterogeneous geologic media, and (3) contribute to the compilation of knowledgebase of repository science and technology.
- 2.2 DOE shall conduct the research within the Project Annex at the Lawrence Berkeley National Laboratory (LBNL), Berkeley, California.
- 2.3 Details of the work under the objectives set forth in Section 2.1 will be developed annually through discussions and deliberations at the JAEA/DOE Technical Coordinators' annual meeting (see Section 4 below). Such details will be developed based on the progress made in the previous year and the needs of JAEA and DOE identified in the current year. The annual research program agreed by both sides will be documented in an Annual Work Statement. Work will only be started after the Annual Work Statement is finalized.
- 2.4 Annual reports from the Collaborative Program shall be prepared by LBNL and submitted to JAEA and DOE.
- 2.5 Technology and information developed under this Project Annex will be transferred to JAEA and DOE. The transfer shall be facilitated through such means as reports, workshops, and personnel visits. The mechanism of technology and information transfer will be in accordance with the articles set forth in the Agreement.

#### Section 3 - Project Intellectual Property

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Project Annex and agree that all intellectual property arising from the Project activities shall be governed by the Annex to the Agreement.

#### Section 4 - Management Plan

DOE shall conduct the research outlined in the Attachment at the Lawrence Berkeley National Laboratories (LBNL), in Berkeley, California. Annual reports shall be prepared by LBNL and submitted to both Parties. The Parties shall designate one Technical Coordinator each to supervise the activities under this Project. The Technical Coordinator for DOE will work at Lawrence Berkeley National Laboratories and will be responsible for completion of the DOE components of all tasks. A coordinating group consisting of the Technical Coordinators and other participants from the Parties shall meet approximately semi-annually on dates and at locations mutually agreed upon. Decisions by this coordinating group shall be by agreement between the technical Coordinators, whose activities shall be under the oversight of the Parties' Principal Coordinators cited in Article 4 of the Agreement.

#### Section 5 - Funding

JAEA shall provide funding to DOE for the work outlined in the Attachment. The amount of funding and the work for each year shall be agreed upon in writing by the Technical Coordinators in the form of Annual Work Statement and Memorandum. JAEA's funding to DOE/LBNL for

Japanese fiscal year 2008 and after shall be subject to the approval of the budget by the Japanese Government. DOE through Lawrence Berkeley National Laboratory plans to make available laboratories and computer facilities, necessary equipment, ancillary staff services necessary to carry out the work mutually agreed upon. DOE/LBNL shall carry out its activities under this Project Annex subject to the availability of appropriated funds. JAEA shall be responsible for the services of necessary JAEA personnel and contractor staff to support the tasks outlined in the attachments to this Project Annex.

#### Section 6 - Dissemination of Project Information

The information derived from this Project is expected to be of global significance with respect to nuclear repository siting, characterization and license development. The Technical Coordinators will submit the results of the Project to the Parties. The Parties agree to disseminate the information as they see fit through professional meetings, technical reviews, specific documents and peer reviewed journals, workshops and other channels. Both Parties will strive for completely open distribution of the Project's research results.

#### Section 7 - Amendment of the Project Annex

This Project Annex may be amended by written agreement of the Parties.

#### Section 8 - Effective Date and Termination

- 1. This Project Annex shall become effective upon signature and shall remain in effect so long as the Agreement remains in effect. Definition, duration and funding of specific tasks or additional tasks under this Project Annex will be agreed upon in writing between the Technical Coordinators.
- 2. Either Participant may terminate this Project Annex at any time upon 3 months written notice to the other Participant.

SIGNED in duplicate in the English Language.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE JAPAN ATOMIC ENERGY AGENCY:

Joshi Nagaoka

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Research in the following three areas will be carried out on a "best effort within available funding" basis at the Lawrence Berkeley National Laboratory under the collaborative program. Work for each year will start upon signature of the Memorandum.

A. Development of site characterization, monitoring, and modeling methodologies:

LBNL will develop advanced technologies for characterization, monitoring and modeling for two types of potential repository host rocks: crystalline and sedimentary rock (corresponding to the Mizunami and Horonobe sites). We will investigate the use of independent lines of evidence such as the temperature distribution, salinity and other non-hydrologic data to help increase the model reliability. By conducting scenario testing simulations, we will attempt to develop technologies to reduce major uncertainties that are commonly associated with site characterization such as the boundary conditions, recharge rate and other parameters that are difficult to measure directly. We will also address the cause of anomalous observations such as low/high pressure zones through the use of alternative interpretation. The study should help guide the field investigations by indicating what kind of measurement are needed at what locations, which will lead to advanced analysis methods and reduced uncertainties. Adaptation of emerging technologies to site investigation and monitoring, such as wireless MEMS sensors for distributed and continuous measurements, and remote sensing technology will also be investigated.

**B.** Development of understanding and methodology for modeling of solute transport in complex fractured rock and improvement of field method to provide needed heterogeneity data for such modeling:

Under this task, LBNL will continue to develop basic understanding of the role of the processes and features affecting flow and tracer transport in geological systems, and methods will be developed for field measurements of controlling parameters and for modeling tracer migration and breakthrough curves in such systems. Such understanding is critical for understanding data from field measurements and conducting performance and safety assessment of a nuclear waste geologic repository. More specifically, two complementary lines of research will be pursued. Firstly, the applicability of parameters determined from the scale field tests to predictive calculations on the scale appropriate to performance assessment will be evaluated and assessed. How to relate the two scales will be a question to be addressed. Secondly, research will be conducted on the flowing fluid electric conductivity logging method which has been shown to be a useful technique to obtain spatial variation of permeability along a borehole and, in particular, the permeabilities of all fractures intersected by the well. This method will be further developed so as to enabling the measurement of critical data necessary for characterizing a site and for modeling of solute transport over multiple scales in complex fractured rocks.

C. Scientific discussion and input to site investigation program and PA.:

LBNL will participate in meetings to discuss with JAEA on the site investigation program and PA. The experience and knowledge of LBNL scientists and the lessons learned through the Yucca Mountain Program and other international repository programs should be most useful.

## Memorandum between U.S. Department of Energy/LBNL and Japan Atomic Energy Agency

This is to confirm the amount of funding provided by the Japan Atomic Energy Agency (JAEA) based on the Section 5 of the Project Annex between JAEA and the U.S. Department of Energy (DOE) for the Collaborative Program on Repository Geocience and PA Technology Development.

The total amount of XXX U.S. dollars will be funded from the date of signature to March 31, 20XX for the tasks to be carried out at the Lawrence Berkeley National Laboratory (LBNL) and described in the attached Annual Work Statement. The payment will be made within 30 days from JAEA's receipt of invoice from LBNL.

Confirmation of Work and funding by Japan Atomic Energy Agency	Acceptance of Work Statement by US DOE/LBNL
JAEA International Affairs Department	LBNL Contract Officer
Date:	Date:

# ARRANGEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

# THE MINISTRY OF PETROLEUM AND NATURAL GAS OF THE REPUBLIC OF INDIA FOR THE EXCHANGE OF INFORMATION RELATING TO THE HYDROCARBON SECTOR

The Department of Energy of the United States of America and the Ministry of Petroleum and Natural Gas of the Republic of India (hereinafter referred to as the "Participants");

Recognizing their mutual interest in consulting and exchanging readily available hydrocarbon sector statistics and other hydrocarbon sector market information;

Desiring to improve information technology processes in the hydrocarbon sector; and

Seeking broader dissemination of available hydrocarbon sector information;

State their understanding as follows:

# ARTICLE 1 OBJECTIVE AND IMPLEMENTATION

The overall objective of cooperation under this Arrangement is to establish for the mutual benefit of the Participants a reasonably balanced exchange of hydrocarbon sector information to complement existing hydrocarbon sector statistics and other hydrocarbon sector market information. For the Department of Energy of the United States of America and the Ministry of Petroleum and Natural Gas of the Republic of India, cooperative activities under this Arrangement are to be conducted by the Energy Information Administration and the Petroleum Planning & Analysis Cell, respectively.

# ARTICLE 2 AREAS OF COOPERATION

Cooperation under this Arrangement may include the following:

1. Exchange of annual hydrocarbon sector market statistics, including those relating to production, imports, exports, stocks, bunkers, transformation, and demand;

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- 2. Exchange of other related data and information concerning fuel characteristics, refining capacity, reserves, and other hydrocarbon sector information;
- 3. Exchange of information concerning statistics methods, analytic techniques, and system documentation;
- 4. Exchange of information about electronic information dissemination; and
- 5. Other areas as mutually determined by the Participants in writing.

#### ARTICLE 3

#### FORMS OF COOPERATION

The forms of cooperation undertaken by the Participants in the areas specified in Article 2 may include the following:

- 1. Assignment of personnel for agreed periods of time in order to participate in activities conducted in research centers, laboratories, universities, and other facilities and enterprises of each Participant or of associated organizations;
- 2. Organization of workshops and meetings; and
- 3. Other forms of cooperation as the Participants mutually determine in writing.

The Participants understand that cooperation under this Arrangement is not to include any research and development activities.

#### **ARTICLE 4**

#### **MANAGEMENT**

- 1. The Participants intend to establish a Working Group, consisting of an equal number of representatives of each Participant. Each Participant is to designate a Co-Chair for the Working Group to coordinate plans for the overall management of cooperative activities under this Arrangement. The Co-Chairs are to meet as needed, alternately in the United States and in India unless otherwise decided, to evaluate the status of cooperation under this Arrangement. This evaluation is to include a review of achievements, problems, and effectiveness of activities under this Arrangement. The Co-Chairs are to consider and approve future program opportunities with a view to maximizing the mutual benefits of cooperation.
- 2. Each Co-Chair is to designate a technical advisor to serve as the point-of-contact for the supervision of activities under the Arrangement.

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- 3. Each Co-Chair may appoint technical coordinators to manage specific cooperative tasks initiated under this Arrangement and to establish and maintain working contacts at the staff level.
- 4. Meetings of the Working Group or selected members from the Working Group are to be held as decided by the Co-Chairs.
- 5. The agendas for all meetings are to be determined by the Co-Chairs. Minutes are to be signed immediately after each meeting.
- 6. Working Group members are responsible for their own travel and lodging expenses. It is expected that the Participant hosting a meeting of the Co-Chairs is to pay the costs for arrangements associated with the meeting.

#### **ARTICLE 5**

#### ASSIGNMENT OF PERSONNEL

The Participants intend the following provisions to apply to assignment of staff:

- 1. Each Participant is to ensure that qualified staff is selected for assignment to the other Participant. Each assignment of staff is to be the subject of a separate written agreement between the Participants.
- 2. Each Participant is to be responsible for the salaries, insurance, and allowances of its personnel. The assigning Participant is to pay for the travel and living expenses of its personnel while on assignment to the receiving Participant unless the Participants agree otherwise in writing.
- The receiving Participant is to arrange for adequate accommodations for the assigned personnel and their families on a mutually agreeable, reciprocal basis.
- 4. The receiving Participant is to provide appropriate assistance to the assigned personnel and their families as regards administrative and travel formalities, such as assistance in making travel arrangements.
- 5. The assigning Participant is to ensure that its assigned personnel conform to rules of work and safety regulations in force at the establishment of the receiving Participant, or as set forth in the personnel assignment agreement.

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#### **ARTICLE 6**

#### **AVAILABLE INFORMATION**

The Participants intend that information transmitted by a Participant to the other Participant under this Arrangement is to be accurate to the best knowledge and belief of the transmitting Participant.

## ARTICLE 7 GENERAL PROVISIONS

The Participants understand that:

- 1. Each Participant is to conduct its activities provided for under this Arrangement subject to its applicable laws and regulations, and subject to the availability of personnel and appropriated funds.
- 2. The Participants understand that no proprietary, classified, or restricted information is to be exchanged as a result of the activities under this Arrangement.
- 3. The Participants understand that, unless otherwise agreed in writing, all costs resulting from activities under this Arrangement are the responsibility of the Participant that incurs them.
- 4. The Participants understand that this Arrangement is not intended to create legally binding obligations.

#### **ARTICLE 8**

#### FINAL PROVISIONS

- 1. Cooperation under this Arrangement may commence upon signature, and continue for five years. The Participants through mutual consultation may alter the terms of this Arrangement in writing at any time.
- 2. If either Participant wishes to terminate its activities under this Arrangement, it is to give six (6) months advance written notification to the other Participant.

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For the United States of America: David K. Garman, Under Secretary, U.S. Department of Energy For the Republic of India: M.S. Srinivasan, Secretary, Ministry of Petroleum and Natural Gas

Date: February, 9 2006

Place: New Delhi

#### **REVISION NO. 1**

TO

#### MEMORANDUM OF UNDERSTANDING

#### **AMONG**

#### THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

AND

#### THE COMMISSARIAT À L'ÉNERGIE ATOMIQUE OF THE FRENCH REPUBLIC

#### AND

#### THE JAPAN ATOMIC ENERGY AGENCY

#### CONCERNING COOPERATION ON SODIUM-COOLED FAST REACTOR PROTOTYPES

The Department of Energy of the United States of America, the Commissariat à L'Énergie Atomique of the French Republic, and the Japan Atomic Energy Agency, hereinafter the "Participants,"

ACKNOWLEDGING the positive results of their cooperation under their Memorandum of Understanding (MOU) of January 31, 2008, and

DESIRING to expand the scope of their cooperation and consult on appropriate arrangements for their future cooperation,

HEREBY REVISE THE MOU AS FOLLOWS:

- 1. The Participants intend to cooperate in the following areas in addition to the areas listed in Paragraph 3 of the MOU:
  - exploring a plan to reflect data and experience from the Monju reactor restart to future demonstration/prototype reactors,
  - discussing a common strategy regarding research and facilities that will be needed to produce and qualify minor actinide-bearing transmutation fuel or targets, and
  - discussing advanced fast reactor fuel cycle characteristics.
- 2. A report summarizing progress achieved on the topics covered in the MOU should be jointly developed by the Participants by October 1, 2008.
- 3. In addition to the activities cited in Paragraph 10 of the MOU, the Steering Committee should coordinate discussions among the Participants to identify areas for potential future cooperation in the field of separations technology complementary to the activities conducted under this MOU.
- 4. Paragraph 6 of the MOU is revised to read as follows:

"Each Participant should conduct the cooperation under this MOU in accordance with applicable laws and regulations in its respective country, as well as the provisions of relevant international agreements."

5. Paragraph 12 of the MOU is revised to read as follows:

"Cooperation under this MOU may commence upon signature. If a Participant wishes to discontinue its participation in the activities contemplated by this MOU, it should endeavor to provide at least 90 days' advance notice in writing to the other Participants. The Participants may discontinue their cooperation under this MOU at any time by mutual consent in writing."

This Revision No. 1 takes effect from July 1, 2008.

Signed in three originals.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

Date: AUGUST 7, 2008
Place: WASHINGTON, D.C.

FOR THE COMMISSARIAT À L'ÉNERGIE ATOMIQUE OP THE FRENCH REPUBLIC :

Date: 95 Nout lock

Place: SACLAY

Alain BUGAT Administrateur Général

FOR THE JAPAN ATOMIC ENERGY AGENCY:

岡崎俊雄

Date: August 18, 2008

Place: Tokyo

## NON-DISCLOSURE ARRANGEMENT CONCERNING COOPERATION ON SODIUM-COOLED FAST REACTOR PROTOTYPES

#### AMONG:

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA, an instrumentality of the Government of the United States of America, with headquarters located at 1000 Independence Avenue, S.W., Washington, D.C. 20585,

#### AND

THE JAPAN ATOMIC ENERGY AGENCY, an Independent Administrative Entity of Japan established by the Japan Atomic Energy Agency Law, with headquarters located at 4-49, Muramatsu, Tokai-mura, Naka-gun, Ibareki-ken, 319-1184 Japan,

#### AND

THE COMMISSARIAT À L'ÉNERGIE ATOMIQUE OF THE FRENCH REPUBLIC, a French state-owned research entity with a scientific, technical activity duly organised under the laws of France and having its registered office, located at Bâtiment Le Ponant D - 25, rue Leblanc - Paris 15ème (France) - and declared at the Paris Register of Commerce and Trade ("Registre du Commerce et des Sociétés de Paris") under the following registration number: R.C.S. PARIS B 775 685 019,

Confirming that this Arrangement does not constitute an agreement among the governments of the United States of America, Japan and the French Republic, and acting in furtherance of paragraph 7 of the Memorandum of Understanding among the Department of Energy of the United States of America, the Japan Atomic Energy Agency, and the Commissariat à l'Energie Atomique of the French Republic concerning Cooperation on Sodium-Cooled Fast Reactor Prototypes of 31 January 2008, as revised (hereinafter the "MOU"),

#### IT IS HEREBY AGREED AS FOLLOWS:

#### ARTICLE 1 : PURPOSE

The purpose of the present Arrangement is to set forth the conditions under which the Parties undertake to maintain the confidentiality of all Business-Confidential Information exchanged during activities performed within the framework of the MOU. The Parties acknowledge that no information with a national security classification shall be disclosed under this Arrangement, and that each Party shall comply with applicable laws and regulations to which it is subject, including all applicable export control laws and regulations, as well as the provisions of relevant international agreements to which its government is a party.

#### ARTICLE 2: BUSINESS-CONFIDENTIAL INFORMATION

#### 2-1 Business-Confidential Information:

Business-Confidential Information is defined as any type of information, and/or data disclosed and/or made accessible by one Party (hereinafter the "Disclosing Party") to another Party (hereinafter the "Receiving Party"), and properly designated as "Business-Confidential" by the Disclosing Party. This information and/or data shall be regarded as Business-Confidential Information, whether they are disclosed orally or in writing, regardless of the medium (including but not limited to paper, magnetic, digital or any other medium) and regardless of its/their nature, whether scientific, technical, financial, commercial, legal or of any other nature. Business-Confidential Information may include, without limitation, any sample, prototype, product, chart, plan, data and/or process, whether patentable or not.

The Disclosing Party shall mark all Business-Confidential Information with an appropriate stamp, legend or other written notice; or, when Business-Confidential Information is disclosed orally and is treated as Business-Confidential at the time of its disclosure, the Disclosing Party shall promptly (but in no case later than 40 days after oral disclosure), confirm in writing to the Receiving Party the Business-Confidential nature of the information.

#### 2-2 Exceptions

Business-Confidential Information does not include information:

- that at the date of its disclosure to the Receiving Party, was already in the Receiving Party's possession, provided that it was not in breach of any legal obligation, or
- that was independently developed in good faith by members of the Receiving Party's staff, or
- that was lawfully received from a third party not subject to any obligation of confidentiality, or
- that was publicly accessible at the moment of communication by the Disclosing Party, or that became so after the communication through no error on the part of the Receiving Party, or
- for which disclosure was required by law or regulation, or a final decision of a court. In this case, the communication of Business-Confidential Information shall be limited to that which is strictly necessary to comply with such duty. The Receiving Party is required, to the fullest extent feasible, to previously notify the Disclosing Party of such communication.

#### ARTICLE 3: OBLIGATIONS OF THE RECEIVING PARTY

The Receiving Party undertakes to maintain as confidential Business-Confidential Information provided by the Disclosing Party, and notably:

- 3-1 to take all necessary measures to prevent the loss or theft of Business-Confidential Information, the fraudulent access to such Business-Confidential Information, as well as any disclosure to any third party that would not be authorized by the provisions of this Arrangement, except that such Business-Confidential Information may be disclosed, solely for purposes of carrying out cooperation under the MOU, to contractors or subcontractors of a Party, and under the restriction that the Business-Confidential Information be retained in confidence and not be further disclosed. In the event where, in spite of these precautions, a third party other than a contractor or subcontractor of a Party carrying out a purpose of the cooperation under the MOU, has access to all or a part of Business-Confidential Information, the Receiving Party undertakes to immediately inform the Disclosing Party, by any means, immediately after discovering any breach of confidentiality.
- 3-2 not to copy, reproduce, duplicate, communicate, transfer, whether directly or indirectly, Business-Confidential Information to any third party other than a contractor or subcontractor of a Party carrying out a purpose of the cooperation under the MOU, without the prior written authorization of the Disclosing Party. If the Receiving Party wishes to copy, reproduce, duplicate, communicate, transfer, whether directly or indirectly, Business-Confidential Information to any third party other than a contractor or subcontractor of a Party carrying out a purpose of the cooperation under the MOU, it shall seek explicit written authorization therefor from the Disclosing Party. Such a request shall be sent by registered mail, with notice of receipt. If the Disclosing Party does not respond within two (2) months after receipt of such request, its consent shall be deemed to have been given.
- 3-3 to transfer to its staff or its contractors or subcontractors carrying out a purpose of this Cooperation only the part of Business-Confidential Information that is strictly necessary for the implementation of the cooperation under the MOU.
- 3-4 to take any appropriate measure to have its staff, contractors and subcontractors abide by the provisions of this Arrangement.

#### ARTICLE 4: USE OF BUSINESS-CONFIDENTIAL INFORMATION

- 4-1 All Business-Confidential Information, as well as any reproduction that may have been authorized in conformity with the terms of article 3-2 of the present Arrangement, shall remain the property of the Disclosing Party, unless otherwise stated in writing by the Disclosing Party and provided such Business-Confidential Information is returned to the Disclosing Party or otherwise disposed of in conformity with the terms of article 6-4 of the present Arrangement.
- 4-2 The Receiving Party undertakes not to use Business-Confidential Information received from a Disclosing Party, whether directly or indirectly, for any other purpose than carrying out cooperative activities contemplated by the MOU.
- 4-3 The communication of Business-Confidential Information from the Disclosing Party to the Receiving Party shall not be construed as granting any license or amounting to any waiver of rights by the Disclosing Party to protect its Business-Confidential Information by a patent or any other intellectual property right, nor can it be construed as granting the

Receiving Party any right on the use or exploitation of such Business-Confidential Information other than as specified in this Arrangement.

#### ARTICLE 5: NO WARRANTY

The Disclosing Party makes no representations or warranties, whether express or implied, with respect to the accuracy, completeness or fitness for particular purpose of any Business-Confidential Information.

#### ARTICLE 6: TERM AND DURATION

- 6-1 This Arrangement shall enter into force on July 1, 2008, and (subject to the termination provision of article 6-2) will remain in effect for 20 years.
- 6-2 The Parties may by mutual agreement in writing amend or terminate this Arrangement at any time.
- 6-3 A Party may withdraw from this Arrangement upon 3 months prior written notice to the other Parties; provided, however, that the withdrawing Party shall be subject to the provisions of articles 6-4 and 6-5.
- 6-4 After a Party withdraws or upon termination of this Arrangement for any reason whatsoever or at any time, at the Disclosing Party's written request, the Receiving Party shall, within the shortest delay:
  - a) return all Business-Confidential Information that has been received, or
  - b) destroy all copies, extracts and reproductions of Business-Confidential Information received in connection with the MOU, including any document, memo, minutes of a meeting including it, and provide the Disclosing Party with a certificate of destruction of such elements.
- 6-5 The confidentiality provisions and obligations regarding the use of Business-Confidential Information shall stay in force for 25 years from the date of the Arrangement's entry into force. This provision shall survive the termination of this Arrangement or the withdrawal of a Party.

#### **ARTICLE 7: MISCELLANEOUS**

- 7-1 Nothing in this Arrangement shall affect the ownership of any Business-Confidential Information or any intellectual property rights therein. No provisions in this Arrangement shall be construed as an obligation for the Disclosing Party to communicate its Business-Confidential Information, nor the materials, inventions or discoveries that are related to it.
- 7-2 Each Receiving Party undertakes not to assign or transfer its rights or obligations under this Arrangement to any third party.

#### ARTICLE 8: GOVERNING LAW - SETTLEMENT OF DISPUTES

8-1 The Parties concerned shall select the governing law and the competent court for the resolution of any dispute relating to the existence, the validity, the construction, the performance, and/or the termination of this Arrangement, and that the concerned Parties are unable to solve amicably.

EXECUTED IN THREE ORIGINAL COUNTERPARTS, ONE FOR EACH PARTY:

For the Department of Energy of the United States of America:

Date: AUGUST 7, 2008

Place: WASHINGTON, AC

For the Japan Atomic Energy Agency:

田崎俊雄

Date: August 18, 2008

Place: Tokyo

For the Commissariat à l'Energie Atomique of the French Republic:

Date: 27 Acut 2008

Place: SACLAT

Alain BUGAT
Administrateur Général

#### **IMPLEMENTATION AGREEMENT 4**

# BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND THE MINISTRY OF NATIONAL INFRASTRUCTURE OF THE STATE OF ISRAEL

### FOR COOPERATION IN THE FIELD OF RENEWABLE ENERGY AND ENERGY EFFICIENCY

The Department of Energy of the United States of America and the Ministry of National Infrastructure of the State of Israel, referred to herein individually as a "Party" and together as the "Parties",

ACTING pursuant to Article V.b of the Agreement between the Department of Energy of the United States of America and the Ministry of National Infrastructure of the State of Israel Concerning Energy Cooperation of February 22, 2000 (the "Agreement");

RECOGNIZING the importance of developing advanced energy technologies for attaining energy security while preserving the environment, improving energy efficiency and diversifying the energy supply; and

SEEKING to renew and expand the Parties' cooperation regarding the research, development, and demonstration of advanced renewable energy technologies and energy efficiency technologies;

#### AGREE AS FOLLOWS:

#### Article 1

- 1. The purpose of this Implementation Agreement is to establish a framework for cooperation between the Parties in the field of renewable energy and energy efficiency.
- 2. This Implementation Agreement is subject to and governed by the Agreement.

#### Article 2

The areas of collaborative research and development under this Implementation Agreement may include, but are not limited to:

- (a) new and improved sources of high temperature thermal energy storage;
- (b) electric vehicle and plug-in hybrid electric vehicle battery technologies and utilization approaches;
- (c) biofuel production and use, including enzyme catalysts for conversion of biomass to biofuel, and use of microalgae to produce biofuels and boosting production by taking advantage of power plant CO<sub>2</sub> emissions to accelerate algae growth;
- (d) advanced technologies for improved efficiencies in water desalinization techniques, such as photovoltaic powered reverse osmosis.

#### Article 3

- 1. Activities under this Implementation Agreement may include information exchange, seminars, and programs for research visits and exchange of personnel between research establishments, joint research and development projects and collaboration between leading research and development centers in the United States and Israel, and other activities as jointly agreed in writing by the Parties or their designated agents.
- 2. The Parties may invite entities in the private sector to participate, at their own expense and under such other conditions as the Parties jointly agree, in the cooperative activities under this Implementation Agreement.

#### Article 4

- 1. The Parties hereby establish a Bilateral Working Group, consisting of an equal number of representatives of each Party, to promote and manage the cooperative activities under this Implementation Agreement.
- 2. Each Party may invite experts and other individuals, including a representative of the United States Israel Binational Industrial Research and Development Foundation (BIRD) and the United States Israel Binational Science Foundation (BSF), to attend Bilateral Working Group meetings as observers, to obtain those individuals' advice on the topics of the agenda.

- 3. Each Party may designate a national point of contact for the Bilateral Working Group.
- 4. Unless the Parties decide otherwise, the Bilateral Working Group intends to meet at least once a year. The Parties intend to hold their first meeting no later than December 31, 2008.
- 5. The Bilateral Working Group shall report on an annual basis the progress of the cooperative activities within this Implementation Agreement to the Coordinators identified pursuant to Article IV of the Agreement.

#### Article 5

- 1. This Implementation Agreement shall enter into force upon signature.
- 2. A Party may terminate this Implementation Agreement at any time by a written notice to the other Party. Termination shall take effect 30 days following the date of that notification.
- 3. Subject to paragraph 2 of this Article, this Implementation Agreement shall remain in force for the duration of the Agreement.
- 4. This Implementation Agreement may be amended in writing by the Parties at any time, so long as the Agreement remains in force.
- 5. Any activity undertaken under this Implementation Agreement and not completed upon termination or expiration of this Implementation Agreement may be continued to completion, provided the Agreement remains in force.

IN WITNESS WHEREOF, the undersigned, being duly authorized by their respective Governments, have signed this Implementation Agreement.

DONE at Jernsalem, in duplicate this day of MAY, 2008.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

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FOR THE MINISTRY OF NATIONAL INFRASTRUCTURE OF THE STATE OF ISRAEL:

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#### **Statement of Intent**

#### between

## The Department of Energy of the United States of America and

## The Ministry of Economy, Trade and Industry of Japan for Cooperation in Methane Hydrates

The Department of Energy of the United States of America (DOE) and the Ministry of Economy, Trade and Industry of Japan (METI) (hereinafter referred to as the "Participants"),

DESIRING to cooperate to increase understanding of the geologic occurrence of, and the potential for methane production from, methane hydrates in both Japan and the United States;

SHARING a long tradition of scientific cooperation under the Agreement between the Government of the United States of America and the Government of Japan on Cooperation in Research and Development in Science and Technology of June 20, 1988, as extended and amended; and

NOTING their countries' participation in international methane hydrate research and development projects, including the Integrated Ocean Drilling Program and the methane hydrate production test wells in 2002 in the Canadian Arctic,

State their intention as follows:

#### Section 1. Objective

The proposed cooperation between the METI and the DOE under this Statement of Intent (Statement) aims to enhance and accelerate the understanding of the geologic occurrence, distribution, exploration and production of methane hydrates in the Arctic and along the continental margin of Japan and the United States of America.

#### Section 2. Areas of Cooperation

The Participants intend to exchange scientific and technical information and scientific personnel; conduct workshops, seminars and other meetings; and plan cooperative research with respect to the following broad areas of cooperation:

- Methane hydrate exploration and resource assessment;
- Laboratory analysis and characterization of sediments containing methane hydrate;
- Modeling for producibility of natural gas from hydrated reservoirs;
- Field testing of producibility from Alaskan North Slope hydrate reservoirs;
- Environmental studies of the impacts of methane hydrate in the global carbon cycle, global climate change and seafloor stability.

#### Section 3. Participating Organizations

By mutual consent, the Participants may invite organizations in their respective countries to work together collaboratively on methane hydrates under this Statement.

#### Section 4. Exchange of Information

The Participants may exchange scientific and technical information, documents and results of research and development. Such information should be limited to that which the Participants have the right to disclose, either in their possession or available to them. Information to be exchanged under this Statement includes, but is not limited to, available technology, knowledge sharing, seismic data, well logs, core analysis, and other related laboratory analysis.

#### Section 5. Management

Each Participant should designate a coordinator for the activities under this Statement. Each coordinator may appoint technical coordinators to manage specific cooperative activities under this Statement. The coordinators may meet at such times and places as they may jointly determine.

#### Section 6. General Matters

- 1. Implementation of this Statement may commence upon signature by both Participants and continue for three years, subject to paragraph 3 below. This Statement may be extended for additional periods as determined in writing by both Participants.
- 2. This Statement may be modified in writing at any time by the Participants' mutual consent.
- 3. If either Participant wishes to discontinue its cooperation under this Statement, it should endeavor to provide ninety (90) days written notice to the other Participant.
- 4. Each Participant is responsible for its costs of participating in the cooperative activities under this Statement.
- 5. This Statement does not create any legally binding obligations.
- 6. Each Participant should conduct the activities provided for under this Statement in accordance with the applicable laws and regulations to which it is subject, and subject to the availability of personnel and appropriated funds.

Signed at Aomori on the sixth day of June, 2008, in duplicate.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

Samuel W Boduras

FOR THE MINISTRY OF ECONOMY, TRADE AND INDUSTRY OF JAPAN:

#### MEMORANDUM OF UNDERSTANDING

#### BETWEEN

## THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

#### AND

## THE MINISTRY FOR ECONOMY AND INNOVATION OF THE PORTUGUESE REPUBLIC

#### ON COOPERATION IN WAVE ENERGY TECHNOLOGIES

The Department of Energy of the United States of America and the Ministry for Economy and Innovation of the Portuguese Republic, hereinafter the "Signatories";

Recognizing that Portugal is a leader in wave energy generation technologies;

**Noting** that an operational wave energy program may be a key element of the economic growth and energy security of the United States, Portugal and other countries;

Recognizing the benefit of sharing lessons learned in seeking solutions to common energy challenges;

**Sharing** a sense of commitment to enhancing energy security through development of cutting edge technology such as wave energy generation technology; and

Desiring to cooperate in the area of new and renewable energy technologies;

Have reached the following understanding:

#### 1. Scope of Cooperation

The purpose of this Memorandum of Understanding (MOU) is to establish a framework for the Signatories' cooperation on the policy, scientific and technical aspects of wave energy generation and other renewable energy technologies.

#### 2. Areas and Forms of Cooperation

- a. The Signatories intend to develop a work plan to define the scope of their proposed cooperation under this MOU. The work plan may be revised in writing as mutually determined by the Signatories.
- b. The areas and forms of cooperation under this MOU include, but are not limited to:
  - Wave resource assessment methodology
  - Exchange of personnel for short-term visits and assignments
  - Test planning and evaluation of ocean wave technology demonstration projects
  - Exchange of engineering and environmental test data
  - Exchange of information on wave energy device modeling.

#### 3. Joint Working Group

The Signatories intend to establish a Joint Working Group to manage their cooperation under this MOU. The Joint Working Group should review the work plan on an annual basis, by meeting in person or through written communications. Each Signatory should identify a point of contact responsible for coordination.

#### 4. Participating Organizations

The Signatories, through the Joint Working Group, may invite other entities, including laboratories, universities, and private sector organizations, to participate at their own expense in the cooperation under this MOU.

#### 5. Financial and Human Resources

- a. Each Signatory is responsible for the costs of its participation in all cooperative activities carried out under this MOU unless the Signatories determine otherwise in writing.
- b. Each Signatory's participation in the cooperative activities under this MOU is subject to the availability of funds, resources, and personnel and is to be conducted in accordance with the laws and regulations of that Signatory's government.

#### 6. Legal Effects

This MOU does not create any legally binding obligations between the Signatories.

#### 7. Commencement, Revision, Discontinuation

- a. Implementation of this MOU may commence on the date of signature.
- b. This MOU may be revised by mutual determination of the Signatories in writing.
- c. A Signatory should endeavor to give the other Signatory at least 6 months written notice of its intention to discontinue its cooperation under the MOU and the Signatories should continue to work together to conclude specific cooperative projects already in progress.

Signed at Lisbon the 27th day of May 2008, in duplicate in the English and Portuguese languages.

For the Department of Energy of the United States of America:

amuel W Sodna

For the Ministry of Economy and Innovation of the Portuguese Republic:

#### STATEMENT OF INTENT BETWEEN

## THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

## THE MINISTRY OF KNOWLEDGE ECONOMY OF THE REPUBLIC OF KOREA FOR EXCHANGE OF INFORMATION ON GAS HYDRATE RESEARCH AND DEVELOPMENT

The Department of Energy of the United States of America (DOE) and the Ministry of Knowledge Economy of the Republic of Korea (MKE) (hereinafter referred to as the "Participants"),

RECOGNIZING the importance of gas hydrate research to global and national energy resources, global climate change and geo-hazards;

AIMING to strengthen the cooperation between the Participants in the area of gas hydrate research and development; and

RECOGNIZING that cooperation in the area of gas hydrate research and development will be of mutual benefit to both Participants,

State their intention as follows:

#### Section 1: Scope of Cooperation

DOE, through its Office of Fossil Energy, and MKE intend to exchange information on the following:

- Gas hydrate exploration and resource assessment
- Methods of production of gas hydrates
- Field testing of gas hydrate production
- Gas hydrate dissociation and the potential to mitigate its effects on climate change.

#### Section 2: Exchange of Personnel

The Participants may assign staff to each other for the purpose of sharing knowledge and experience and to provide career development opportunities for each Participant's staff. Each such proposed staff assignment should be the subject of a written agreement between the sending and host institutions.

#### Section 3: Use of Information

The Participants may exchange scientific and technical information, documents and results of research and development. Such information should be limited to that which the Participants have the right to disclose, either in their possession or available to them.

#### Section 4: General Provisions

- Implementation of this Statement of Intent (Statement) may commence upon signature by 1. both Participants and (subject to Paragraph 5) continue for five years. This Statement may be extended for additional periods as determined in writing by both Participants.
- This Statement does not create any legally binding obligations by or between the 2. Participants.
- Each Participant is responsible for its costs of participating in the activities under this 3. Statement.
- Each Participant should conduct the activities contemplated by this Statement in 4. accordance with the laws and regulations to which it is subject, and subject to the availability of personnel and appropriated funds.
- If either Participant wishes to discontinue its cooperation under this Statement, it should 5. endeavor to provide ninety (90) days written notice to the other Participant.

Signed at Washington, in duplicate, this 18 Hday of April, 2008.

For the Department

of Energy

of the United States of America:

For the Ministry

of Knowledge Economy

of the Republic of Korea:

### MEMORANDUM OF UNDERSTANDING BETWEEN

### THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND

THE GOVERNMENT OF THE HASHEMITE KINGDOM OF JORDAN CONCERNING COOPERATION IN NUCLEAR ENERGY AND OTHER ENERGY FIELDS

The Government of the United States of America and the Government of the Hashemite Kingdom of Jordan, hereinafter the "Participants",

ACKNOWLEDGING the need to consider an appropriate mix of environmentally safe and secure sources of energy, including nuclear power, to meet the needs of their respective countries' populations;

RECOGNIZING the need to address challenges of growing energy needs facing both Participants' countries, as well as the broader international community, in a manner that contributes to reducing the harmful effects of greenhouse gases on the global climate;

AFFIRMING the vision and goals of the Global Nuclear Energy Partnership, which seeks the safe, secure and environmentally sustainable development of civilian nuclear energy for peaceful purposes and in a manner that supports nuclear nonproliferation and international safeguards;

UNDERSCORING the shared commitment of both Participants to preventing nuclear proliferation and to strengthening the nuclear non-proliferation regime;

AFFIRMING their strong support for the Treaty on the Non-Proliferation of Nuclear Weapons and for the safeguards system of the International Atomic Energy Agency (IAEA), including the Additional Protocol;

ACKNOWLEDGING their common responsibility to fulfill the requirements of relevant United Nations Security Council Resolutions, including Resolution 1540;

AFFIRMING the intent of the Hashemite Kingdom of Jordan (hereinafter "Jordan"), consistent with the vision of the Global Nuclear Energy Partnership, to rely on existing international markets for nuclear fuel services as an alternative to the pursuit of enrichment and reprocessing, and the intent of the United States to support these international markets in order to ensure reliable fuel supply for Jordan;

#### HAVE REACHED THE FOLLOWING UNDERSTANDING:

- (1) The Participants intend to cooperate, subject to their respective national laws, in the following areas:
- -- development of agreed requirements for grid-appropriate power reactors and fuel service arrangements for Jordan, in a manner that is consistent with the Global Nuclear Energy Partnership;
- -- promotion of the establishment of a reliable source of nuclear fuel for future civilian light water nuclear reactors deployed in Jordan;
- -- development of Jordan's civilian nuclear energy use in a manner that contributes to global efforts to prevent nuclear proliferation;
- -- civilian nuclear energy training, human resource and infrastructure development, and appropriate application of civilian nuclear energy and related energy technology, in accordance with evolving IAEA guidance and standards on milestones for infrastructure development;
- -- application of radioisotopes and radiation in industry, agriculture, medicine and the environment;

- -- radiation protection and management of radioactive
  waste and spent fuel;
- -- nuclear safety, security, safeguards and nonproliferation, including physical protection, export control and border security;
- -- identification of uranium mining and milling resources; and
- -- other areas of cooperation as may be determined by the Participants.
- (2) The cooperation may be undertaken in the following forms:
- (a) exchange of scientific and technical information and documentation;
- (b) exchange and training of personnel;
- (c) organization of symposia and seminars;
- (d) provision of relevant technical assistance and services;
- (e) other forms of cooperation as may be mutually determined by the Participants.

Signed at Vienna, in duplicate, the 16 day of September, 2007.

FOR THE GOVERNMENT OF

THE UNITED STATES

OF AMERICA:

FOR THE GOVERNMENT OF THE HASHEMITE KINGDOM OF JORDAN:

### MEMORANDUM OF UNDERSTANDING BETWEEN

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND

THE MINISTRY OF NATIONAL INFRASTRUCTURES OF
THE STATE OF ISRAEL
CONCERNING COOPERATION ON RENEWABLE AND SUSTAINABLE ENERGY

The Department of Energy of the United States of America and the Ministry of National Infrastructures of the State of Israel, hereinafter the "Participants,"

ACKNOWLEDGING the need to consider environmentally sustainable energy resources to meet the needs of their respective countries' populations;

RECOGNIZING the need to address challenges facing both Participants' countries as well as the broader international community, of growing energy needs in a manner that contributes to reducing the harmful effects of greenhouse gases on the global climate;

NOTING the shared commitment of both Participants to maintaining the highest standards for development of sustainable energy and energy efficiency technologies; and

NOTING FURTHER the Agreement between the Department of Energy of the United States of America and the Ministry of National Infrastructures of the State of Israel Concerning Energy Cooperation of February 22, 2000 (the "Agreement"),

#### HAVE REACHED THE FOLLOWING UNDERSTANDING:

The Participants intend to advance their existing relationship under the Agreement in a manner that affirms their shared goals and commitments towards the development of technologies for sustainable energy and energy efficiency.

The Participants intend to develop a scope of work and a plan of action for cooperation between their relevant programs, within the framework of the Agreement, on solar energy, biomass/biofuels, energy efficiency and clean coal/carbon sequestration technologies, as well as other relevant technologies to be identified by them.

Signed in Washington, D.C., on the sixth day of March, 2008.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE MINISTRY OF NATIONAL INFRASTRUCTURES OF THE STATE OF ISRAEL:

Samuel W Godman

# MEMORANDUM OF UNDERSTANDING

# **BETWEEN**

# THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

# **AND**

# THE MINISTRY OF OIL OF THE REPUBLIC OF IRAQ

### **FOR**

# COOPERATION ON ENERGY ANALYSIS, SCIENCE AND TECHNOLOGY, AND ENERGY TECHNOLOGY DEMONSTRATION

The Department of Energy of the United States of America and the Ministry of Oil of the Republic of Iraq, hereinafter referred to as the "Participants":

Having an interest in establishing cooperation in the areas of energy analysis, science and technology, and energy technology demonstration;

Having a mutual interest in exchanging experience and views on opportunities for the utilization of energy technologies and in fostering collaboration between the two countries in these areas, particularly through training, educational and capacity building activities;

Recognizing that energy security and the quality of life can be enhanced through effective and environmentally sound utilization of energy sources; and

Further recognizing that cooperation in the areas of energy analysis, science, technology, and energy technology demonstration would promote increased economic interaction, facilitate energy technology transfer, accelerate the commercialization of energy systems and products, and expand opportunities for international trade between the United States and Iraq;

Have reached the following understandings:

#### ARTICLE I

Under this Memorandum of Understanding (MOU), the Participants seek to facilitate appropriate joint activities relating to energy analysis, science and technology, and energy technology demonstration in areas of mutual interest, including, but not limited to, the following:

- 1. Fossil energy, including training on technical capacity, geological, and geophysical needs, enhanced oil recovery, and physical investment;
- 2. Environmental issues associated with energy transportation and production, including oil spill management and operational and safety standards;
- 3. Energy information, including collection, analysis, and forecasting
- 4. Such other areas as may be mutually determined by the Participants.

## ARTICLE II

The forms of cooperation in the areas specified in Article I of this MOU may include the following:

- 1. Exchanging energy experts, specialists and scientists to participate in cooperative activities:
- 2. Organizing and participating in seminars, workshops and conferences on specific mutually agreed topics;
- 3. Exchanging information on the development and utilization of energy technologies that are economically sound and protect the environment;
- 4. Sharing relevant non-proprietary information and practical experience in energy fields;
- 5. Assisting Iraq in capacity development through training, joint government-industry activities, faculty and student exchanges and tours, and exploration of ways to promote transfer of skills and technology to support human resources development, and institutional infrastructure;
- 6. Such other forms of cooperation within the scope of this MOU as the Participants may mutually determine.

#### ARTICLE III

- A. The Participants intend to establish the United States-Iraqi Consultative Mechanism to promote energy analysis consultations, energy technology demonstration, and energy training and education with a focus on capacity building in Iraq.
- B. The Consultative Mechanism is to consist of representatives designated by the Participants. As mutually determined, the Participants may include representatives, from other organizations, as appropriate based on the agenda of their consultations

- C. Each Participant should appoint an official contact to prepare for the consultations and energy training and to be responsible for communication between the Participants.
- D. In view of the significant distance between the two countries, electronic and telephonic communications are the preferred modes of interaction.
- E. Meetings of the Consultative Mechanism and of the Participants' selected representatives may be held at such times and places as jointly determined by the Participants.

# ARTICLE IV

Each Participant intends to endeavor, through coordination with the appropriate competent authorities to achieve the timely processing of visas and other forms of official permission for entry into and exit from its country of personnel of the other country engaged in cooperative activities under this MOU.

## ARTICLE V

- A. Each Participant is to conduct the activities provided for under this MOU in accordance with its the applicable laws and regulations of its respective country. Each Participant is responsible for the costs of its own activities under this MOU, unless the Participants determine otherwise agree in writing.
- B. It is understood that this MOU does not create any legally binding obligations between the Participants.
- C. Implementation of this MOU may begin upon signature by both Participants. This MOU may be modified in writing by the Participants' mutual consent. Any such modification may take effect upon signature by the Participants. If either Participant wishes to end its cooperation under this MOU, it should endeavor to provide at least 90 days' advance written notice to the other Participant.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF

AMERICA:

Date: 12-26-2004

FOR THE MINISTRY OF OIL THE REPUBLIC OF IRAQ:

RAL Sait

Date:

# Agreement

#### between

The Department of Energy of the United States of America

and

The Centre National de la Recherche Scientifique of France

for

Cooperation in Basic Scientific Research and Development

#### **Preamble**

The Department of Energy of the United States of America (DOE) and the Centre National de la Recherche Scientifique of France (CNRS), hereinafter referred to as the Parties;

Sharing an interest in contributing to the advancement of knowledge by fostering basic scientific research and development in leading scientific disciplines;

Recognizing that scientific advancement is a lasting endowment for future generations;

Believing that cooperation based on equitable sharing of their respective scientific facilities, capabilities, and experiences would be of mutual benefit; and

Desiring to facilitate the establishment and continuation of joint scientific research projects and scholarly links, and to initiate and establish new ones in fields of mutual interest;

Hereby agree as follows:

# Article 1 - Objective

- 1.1 The objective of this Agreement is to establish a framework for cooperation between the Parties in the fields of basic scientific research and development (R&D).
- 1.2 Cooperation between the Parties shall be on the basis of mutual benefit, equality, and reciprocity.

## Article 2 - Areas of Cooperation

- 2.1 Areas of basic scientific research cooperation may include but are not limited to:
  - ➤ Basic Sciences: Mathematics, Theoretical Physics, Atomic and Molecular Physics, Optics and Lasers, Condensed Matter Physics, and Chemistry;
  - > Computer Science and Information Technology;
  - > High Energy Physics;
  - ➤ Life Sciences;
  - > Nuclear Physics;
  - > Particle Astrophysics and Cosmology; and
  - > Other areas of mutual scientific interest.

## **Article 3 - Forms of Cooperation**

Cooperation under this Agreement may include the following forms:

- 3.1 Exchange of researchers and staff members;
- 3.2 Exchange of scientific and engineering information and results and methods of research and development;
- 3.3 Organization of and participation in seminars or other meetings on specific, agreed-upon topics in the areas listed in Article 2;
- 3.4 Short visits by specialist teams or individuals to the facilities of the other Party, subject to the prior agreement of that Party;
- 3.5 Assignment of the staff of one Party, its contractors, or subsidiaries to the facilities of the other Party, its contractors, or subsidiaries in order to participate in agreed-upon research, development, design, analysis, or other experimental activities;
- 3.6 Exchange of materials and equipment for testing;
- 3.7 Exchange of technology and engineering drawings as appropriate to the areas of cooperation and as agreed to by the Parties;
- 3.8 Joint planning to utilize existing R&D capabilities related to scientific research and development in which common interests will be defined;
- 3.9 Joint projects in which the Parties agree to share work and/or costs, subject to written agreement of the Parties; and,
- 3.10 Such other specific forms of cooperation as the Parties may agree.

### **Article 4 - Implementing Arrangements**

When the Parties agree to undertake a form of cooperation set forth in Article 3 that may involve the sharing of costs or the creation of intellectual property, they shall conclude an Implementing Arrangement subject to this Agreement. Each Implementing Arrangement shall include provisions for carrying out the cooperation and shall cover such matters as scientific and technical scope, as well as other elements necessary to define the activity and the role of the Parties. Activities under Implementing Arrangements may involve, as appropriate, associated firms or laboratories of the Parties or their contractors and subsidiaries.

#### Article 5 - Management

- 5.1 The Parties shall establish a DOE/CNRS Joint Coordinating Committee (JCC) composed of an equal number of representatives from each Party to supervise the cooperative activities under this Agreement. The JCC shall be co-chaired by Principal Coordinators designated by each Party. The JCC may establish Technical Subcommittees to manage specific cooperative activities initiated under this Agreement.
- 5.2 The JCC shall meet each year, alternately in the United States and in France, or at such other times and places as the Parties may agree.
- 5.3 At its meetings, the JCC shall evaluate the status of cooperation under this Agreement. This evaluation may include a review of the past year's activities and accomplishments under this Agreement, a review of the activities planned for the coming year within each of the active areas of cooperation listed in Article 2, an assessment of the balances of exchanges, and a consideration of measures to correct any imbalances. In addition, the JCC shall consider and act on any major new proposals for cooperation.
- 5.4 Management of cooperation under Implementing Arrangements, as defined in Article 4, shall be specified in the respective Implementing Arrangement documents, and shall be in accordance with the policy guidelines established by the JCC.

# Article 6 - Intellectual Property Rights and Business-Confidential Information

The protection and allocation of intellectual property and the protection of business-confidential information created or furnished in the course of cooperative activities under this Agreement shall be governed by the agreement effected by the exchange of diplomatic notes on intellectual property between the Government of the United States of America and the Government of France of June 6, 1997. The text of the Annex on Intellectual Property attached to the diplomatic notes is incorporated into this Agreement as Annex 1, which forms an integral part of this Agreement.

## Article 7 - Security Obligations

Provision for security of information and transfer of technology are set forth in Annex II. Annex II constitutes an integral part of this Agreement.

#### Article 8 - Disclaimer

Information transmitted by one Party to the other Party under this Agreement shall be accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the receiving Party or by any third Party.

## **Article 9 - Legal Provisions**

Each Party's activities under this Agreement shall be in accordance with its national laws and regulations. All questions related to the Agreement arising during its term shall be settled by consultations between the Parties.

#### **Article 10 - General Provision**

The ability of each Party to carry out the activities contemplated by this Agreement is subject to the availability of personnel and appropriated funds. Except when otherwise specifically agreed in writing, each Party shall bear its own costs resulting from cooperation under this Agreement.

# Article 11 - Duration, Amendment, and Termination

- 11.1 This Agreement shall enter into force upon signature and shall remain in force for a period of five (5) years. This Agreement shall automatically renew for further five-year (5) periods unless either Party notifies the other in writing at least six (6) months prior to the expiration of the first five-year period or any succeeding five-year period of its intent to terminate the Agreement.
- 11.2 This Agreement may be amended or extended by written agreement of the Parties.
- 11.3 This Agreement may be terminated at any time at the discretion of either Party upon six (6) months' advance notification in writing by the Party seeking to terminate the Agreement.
- 11.4 Joint efforts and experiments not completed at the expiration or termination of this Agreement may, on agreement of the Parties, be continued until their completion under the terms of this Agreement.

DONE at Washington in duplicate, this 4th day of April, 2005, in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE OF FRANCE:

Raymond T. Owlack

MSJi

# **Annex I: Intellectual Property**

#### Preamble

Pursuant to Article 6 of this Agreement;

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant Implementing Arrangements. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

## I-Scope

- I-A. This Annex is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereafter "cooperative entities") pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their cooperative entities.
- I-B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the convention establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.
- I-C. This Annex addresses the allocation of rights, interests, and royalties between the Parties. Each Party shall ensure that the other Party or cooperative entities can obtain the rights to intellectual property allocated in accordance with the Annex. The allocation between a Party and participants on behalf of this Party in the cooperative activities, which shall be determined by the Party's laws and practices, shall not be altered or prejudiced by application of this Annex.
- I-D. Disputes concerning intellectual property arising under this Agreement should he resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.
- I-E. Termination or expiration of this Agreement shall not affect the rights or obligations under this Annex.

# **II-Allocation of Rights**

II-A. Each Party, subject to the restrictions of Article III of this Annex, shall be entitled to a nonexclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports directly arising under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party or its

- cooperative entities shall have the right to review a translation prior to public distribution.
- II-B. Rights to all forms of intellectual property, other than those rights described in section II-A above, shall be allocated as follows:
- II-B-1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host country with regard to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.
- II-B-2(A). For intellectual property created during joint research, the Parties or their cooperative entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relative contributions of the Parties and their cooperative entities, the benefits of exclusive or nonexclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their cooperative entities.
- II-B-2(B). If the Parties or their cooperative entities cannot reach agreement on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they shall share equally the reasonable cost of intellectual property protection in that country.
- II-B-2(C). A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant Implementing Arrangement, otherwise the allocation of rights to intellectual property will be in accordance with paragraph II-B-1.
- II-B-2(D). In the event that either Party believes that a particular joint research project under this Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no agreement can be reached within a three month period from the date of the request for discussions, the

Parties shall cease the cooperation in the project in question. Notwithstanding paragraphs II-B-2(A) and (B), rights to any intellectual property that have been created will be resolved in accordance with the provisions of Article I-D.

#### III-Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential is furnished or created under the Agreement, each Party and its cooperative entities shall protect such information in accordance with applicable laws, regulations, and administrative practice. Information may be identified as business-confidential information if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential. Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosures shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

#### ANNEX II

#### SECURITY OBLIGATIONS

#### I. PROTECTION OF INFORMATION

Both Parties agree that no information or equipment requiring protection in the interests of national defense or foreign relations of either Party and classified in accordance with the applicable national laws and regulations shall be provided under this Agreement. In the event that information or equipment which is known or believed to require such protection is identified in the course of cooperative activities undertaken pursuant to this Agreement, it shall be brought immediately to the attention of the appropriate officials and the Parties shall consult concerning the need for and level of appropriate protection to be accorded such information or equipment.

## II. TECHNOLOGY TRANSFER

The transfer of export-controlled information or equipment between the two countries shall be in accordance with the relevant laws and regulations of each Party to prevent the unauthorized transfer or retransfer of such information or equipment provided or produced under this Agreement. If either Party deems necessary, detailed provisions for the prevention of unauthorized transfer or retransfer of such information or equipment shall be incorporated into the contracts or Implementing Arrangements.

# Implementing Arrangement No.1 under the Agreement

#### between

The Department of Energy of the United States of America

and

The Centre National de la Recherche Scientifique of France

for

# Cooperation in Nuclear Physics Research

#### Article 1 - General

The purpose of this Implementing Arrangement (IA) is to establish between the Department of Energy of the United States of America (DOE) and the Centre National de la Recherche Scientifique of France (CNRS), hereinafter referred to as the Parties, areas of bilateral scientific collaboration focused on basic research and development in nuclear physics.

Cooperation under this Implementing Arrangement is subject to and governed by the Agreement between the Department of Energy of the United States of America and the Centre National de la Recherche Scientifique of France for Cooperation in Basic Scientific Research and Development, signed on April 4, 2005, hereinafter referred to as the Agreement.

#### **Article 2 - Objectives**

The overall objectives for cooperation under this Implementing Arrangement are to:

- 1. Exchange information on the respective strategies of the Parties in basic nuclear physics research;
- 2. Promote collaboration between DOE and CNRS to improve fundamental knowledge by pursuing scientific research and development in low- and intermediate-energy nuclear physics, and relativistic heavy ion physics.

## Article 3 - Areas of Cooperation

Cooperation under this Implementing Arrangement may include, but is not limited to, the following areas:

> Exchange of researchers, including students;

- > Conceptual design, research and development, and construction of systems or subcomponents, including:
  - o Detectors;
  - o Accelerators and their applications;
  - o Software;
  - o Electronics;
  - o Computing.
- > Theoretical research and simulation works;
- > Nuclear data compilation;
- > Planning, evaluation and review activities;
- > Participation in experiments;
- > Specific collaborative projects covered under Memoranda of Understanding (MOU), between laboratories and grantees supported individually and/or jointly by DOE and CNRS, in areas such as: relativistic heavy-ion collision physics, intermediate energy hadronic physics and rare isotope facilities;
- > Other areas of nuclear science as the Parties may agree.

## Article 4 - Management

Management of this cooperation will be achieved as described below:

- 1. The Parties shall establish a Nuclear Physics Subcommittee (NPS) to the Joint Coordinating Committee (JCC) defined in Article 5 of the Agreement, composed of an equal number of representatives of each Party, to oversee the work under this Implementing Arrangement. The NPS shall meet annually or as deemed appropriate, and provide programmatic guidance to the work conducted under this Implementing Arrangement.
- 2. The NPS shall periodically report on its activities to the JCC, particularly in advance of meetings of the JCC.
- 3. Management of the actual cooperative projects undertaken under this Implementing Arrangement shall be defined in the MOUs or other written instruments executed between the participating laboratories and scientists.

#### Article 5 - Finance

- 1. Except when the Parties agree otherwise in writing, each Party shall fund its participation in the cooperative program.
- 2. For exchanges of researchers and students, living expenses may be paid by the host country while travel expenses and salaries will be covered by the home institution. The NPS will review the exchange of personnel at its regular meetings to assure it is reasonably balanced between the Parties.

#### Article 6 - Duration and Termination

- 1. This Implementing Arrangement shall enter into force upon signature and shall remain in force for the duration of the Agreement.
- 2. This Implementing Arrangement may be amended by written agreement by the Parties.
- 3. Joint efforts and experiments not completed at the expiration or termination of this Implementing Arrangement may, by agreement of the Parties, be continued until their completion under the terms of the Agreement.
- 4. This Implementing Arrangement may be terminated at any time at the discretion of either Party, upon six months' advance notification in writing by the Party seeking to terminate it.

DONE at Washington in duplicate, this 4th day of April, 2005, in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE OF FRANCE:

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# Implementing Arrangement No.2 under the Agreement

#### between

The Department of Energy of the United States of America

and

The Centre National de la Recherche Scientifique of France

for

Cooperation in Particle Physics, Astrophysics and Cosmology

## Article 1 - General

The purpose of this Implementing Arrangement (IA) is to establish between the Department of Energy of the United States of America (DOE) and the Centre National de la Recherche Scientifique of France (CNRS), hereinafter referred to as the Parties, areas of bilateral scientific collaboration focused on basic research and development in particle physics, astrophysics and cosmology.

Cooperation under this implementing Arrangement is subject to and governed by the Agreement between the Department of Energy of the United States of America and the Centre National de la Recherche Scientifique of France for Cooperation in Basic Scientific Research and Development, signed on April 4, 2005, hereinafter referred to as the Agreement.

# Article 2 - Objectives

The overall objectives for cooperation under this Implementing Arrangement are to:

- 1. Exchange information on the respective strategies of the Parties in particle physics, astrophysics and cosmology;
- 2. Promote collaboration between DOE and CNRS to improve fundamental knowledge by pursuing scientific research and development (R&D) in particle physics, astrophysics and cosmology.

# **Article 3 - Areas of Cooperation**

Cooperation under this Implementing Arrangement may include, but is not limited to, the following areas:

> Exchange of researchers, including students;

- > Conceptual design, research and development, and construction of systems or subcomponents, including:
  - o Detectors;
  - o Accelerators and their applications;
  - o Software;
  - o Electronics;
  - o Computing.
- > Theoretical research and simulation works;
- > Planning, evaluation and review activities;
- > Participation in experiments;
- > Specific collaborative projects covered under Memoranda of Understanding (MOU) between laboratories and grantees supported individually and/or jointly by DOE and CNRS, in areas such as: accelerator physics, the physics of the Standard Model and beyond, computation related to high energy physics, particle astrophysics and cosmological observatories;
- > Other areas of particle physics, astrophysics and cosmology as the Parties may agree.

## Article 4 - Management

Management of this cooperation will be achieved as described below:

- 1. The Parties shall establish a Particle Physics, Astrophysics and Cosmology Subcommittee (PPACS) to the Joint Coordinating Committee (JCC) defined in Article 5 of the Agreement, composed of an equal number of representatives of each Party, to oversee the work under this Implementing Arrangement. The PPACS shall meet annually or as deemed appropriate, and provide programmatic guidance to the work conducted under this Implementing Arrangement.
- 2. The PPACS shall periodically report on its activities to the Joint Coordinating Committee, particularly in advance of meetings of the JCC.
- 3. Management of the actual cooperative projects undertaken under this Implementing Arrangement shall be defined in the MOUs or other written instruments executed between the participating laboratories and scientists.

#### Article 5 - Finance

- 1. Except when the Parties agree otherwise in writing, each Party shall fund its participation in the cooperative program.
- 2. For exchanges of researchers and students, living expenses may be paid by the host Party while travel expenses and salaries will be covered by the home institution. The PPACS will review the exchange of personnel at its regular meetings to assure it is reasonably balanced between the Parties.

#### Article 6 - Duration and Termination

- 1. This Implementing Arrangement shall enter into force upon signature and shall remain in force for the duration of the Agreement.
- 2. This Implementing Arrangement may be amended by written agreement by the Parties.
- 3. Joint efforts and experiments not completed at the expiration or termination of this Implementing Arrangement may, by agreement of the Parties, be continued until their completion under the terms of the Agreement.
- 4. This Implementing Arrangement may be terminated at any time at the discretion of either Party, upon six months' advance notification in writing by the Party seeking to terminate it.

DONE at Washington in duplicate, this 4th day of April, 2005, in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

FOR THE CENTRE NATIONAL DE LA RECHERCHE SCIENTIFQUE OF FRANCE:

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Director of JN2P3